Model (1)

20 Marks

1 (A) Choose the correct answer:

1. Lunar eclipse is formed in the .... of the lunar month.
   a) beginning b) middle
   c) end d) after 5 days
2. The fluorescent lamp contains the inert .... gas.
   a) hydrogen b) nitrogen
   c) argon d) helium
3. Which lever does not conserve effort? ....
   a) Wheelbarrow b) Nutcracker
   c) Manual broom d) Bottle opener
4. The last row of cortex layer is called .... layer.
   a) cortex b) endodermis
   c) xylem d) pith

(B) The exerted force of a balanced lever equals 50 Newton and the length of its arm is 2 cm if it is affected by a resistance with a value of 20 Newton, **calculate the length of its arm of resistance**.

....

....

....

2 (A) Complete the following sentences:

1. The nutcracker is a .... class lever, while the scissors are .... class lever.
2. The fluorescent lamps contain inert argon gas and a little amount of ....
3. Impure water cannot be used to put out the fire resulting from ....
4. .... is the external layer that the root hair extends from it.

(B) What happens when ...?

- Connecting more than one lamp in an electric circuit in parallel.

....

3 (A) Write the scientific term for each of the following:

1. A tool used to convert the electric energy into light energy. (..........)
2. Fires that occur as a result of the increase in the temperature of electric wires. (..........)
3. An astronomical phenomenon that occurs when the Earth, Sun and Moon are on one straight line and the Moon in the middle. (..........)
4. The losing of water in the shape of water vapor from plant leaves. (..........)

(B) Give a reason for the following:

- Crowbar is a first-class lever.

....

4 (A) Correct the underlined words:

1. Copper and iron are <u>electric insulators</u>. (..........)
2. To connect lamps in <u>parallel</u>, they are connected one after the other. (..........)
3. In the <u>first</u> class levers the resistance force is between fulcrum and effort force. (..........)
4. Umbra is a <u>semi-dark</u> area where the total solar eclipse occurs. (..........)

(B) Compare:

Point of comparison	2nd class levers	3rd class levers
Definition	....	....
Examples	....	....

Model (2)

20 Marks

1 (A) Complete the following sentences:

1. Tweezers are considered a .... class lever but the wheelbarrow is a .... class lever.
2. There are two ways for connecting lamps, connecting in .... and ....
3. .... gas is produced during the photosynthesis process.
4. Electric shock occurs as a result of the passing of .... through the human body.

(B) Give a reason for the following:

- We should not look at the Sun with the naked eye during the solar eclipse.

....

2 (A) Put (✓) or (✗):

1. Lunar eclipse causes harms to the eyes. ( )
2. We must not play with electric connections. ( )
3. Plant loses water in the form of water vapor in the photosynthesis process. ( )
4. The human body is a conductor of electricity. ( )

(B) What happens when ...?

- There are no stomata on the lower surface of the plants' leaves.

....

3 **(A) Write the scientific term for each of the following:**

1. Vessels through which water passes from the root to the stem and leaves. (..........................)
2. One of the dangers of electricity that causes damage of body tissues. (..........................)
3. It is the force exerted by a person to equilibrate the resistance. (..........................)
4. The distance between fulcrum and resistance. (..........................)

(B) A first lever is affected by 10 Newton force with an arm of length 10 cm and a resistance of 20 Newton.

a. **Calculate the length of arm of resistance.**

....

....

b. Does the lever save effort? Why?

....

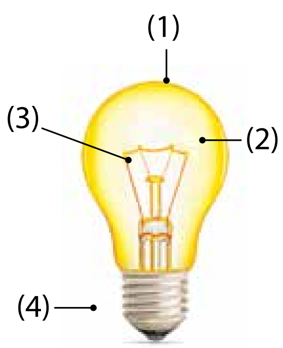
....

4 **(A) Correct the underlined words:**

1. In the beginning of the total lunar eclipse, the color of the Moon tends to be <u>black</u>. (..........................)
2. There are <u>three</u> connecting points at each end of the light bulb ends. (..........................)
3. The glass bulb of the electric lamp contains <u>hydrogen</u> gas. (..........................)
4. <u>Oxygen</u> gas is produced during the respiration process in the plant. (..........................)

(B) Label the opposite figure:

1. ....
2. ....
3. ....
4. ....



Model (3)

20 Marks

1 (A) Choose the correct answer:

1. Which of the following gases is found in the fluorescent lamp but not in the light bulb?

   a) Argon gas. b) Neon gas.

   c) Mercury vapor. d) oxygen gas.

2. .... is/are considered first class lever.

   a) Wheelbarrow b) Pliers

   c) Manual broom d) coal holder

3. .... is one of the functions of levers.

   a) Increasing force b) Decreasing distance

   c) Decreasing speed d) all the previous answers

4. Each stoma is surrounded by two .... cells.

   a) animal b) guard

   c) absorbing d) leaf

(B) Write the function or importance of:

- The glass bulb of the light bulb.

....

2 (A) Put (✓) or (✗):

1. Fires resulted from electricity are extinguished by water. ( )
2. The root extends and penetrates the soil to absorb water. ( )
3. The soda water opener is a second-class lever. ( )
4. When the whole Moon enters the semi-shaded area of Earth, the Moon seems without eclipse. ( )

(B) What happens when ...?

- A part of your body touches an electric source directly.

....

3 (A) Write the scientific term:

1. Small holes that are widely spread on the lower surface of the leaf. (....................)
2. It occurs when part of the Moon enters the Earth's umbra. (....................)
3. A rigid bar that rotates around a fixed point and is affected by a force and a resistance. (....................)
4. A vital process carried out by the plant to produce its own food. (....................)

(B) What is meant by ...?

- Annular solar eclipse:

....

4 (A) Complete the following sentences:

1. .... and .... are examples of materials that are electric conductors.
2. The filament of the light bulb is made of .... and that is because it has high ....
3. .... control the closing and opening of the stomata.
4. The lunar eclipse occurs when the .... lies between the Sun and ....

(B) Arrange the layers of the root from inside to outside:

(Xylem – Cortex – Pith – Endodermis – Epidermis)

....

Model (4)

20 Marks

1 (A) Choose the correct answer:

1. The concentration of the salt solution inside the vacuole is .... the concentration of the salt solution inside the soil.
   a) less than b) more than
   c) equal to d) no correct answer
2. Water transfers from the root to the stem through the .... layer.
   a) cortex b) epidermis
   c) endodermis d) xylem
3. .... is the main source of light on Earth.
   a) Candle b) Fire
   c) Lamp d) Sun
4. The function of a lever is to increase ....
   a) force b) distance
   c) speed d) all the previous answers

(B) What happens when ...?

- There is no battery in the electric circuit.

....

2 (A) Choose from column (B) which suits in column (A):

(A)	(B)
1. Most electric machines produce	a. the partial lunar eclipse occurs.
2. Coal holder is a lever used to	b. heat.
3. Electric lamp is prevented from air to burn its filament by	c. avoid dangers.
4. When a part of the Moon enters the shadow area of the Earth,	d. the glass bulb.

1. .... 2. .... 3. .... 4. ....

(B) Give a reason for the following:

- Light is important for the plant.

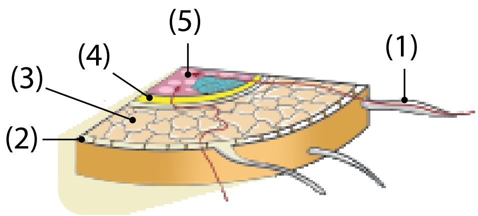
....

3 (A) Complete the following sentences:

1. The manual broom is an example of the .... class levers.
2. .... is a fixed point that a rigid bar rotates on.
3. In the case of connecting the lamps in .... the lighting of the lamps decreases if their number increases.
4. Green plants consist of two main parts which are .... and ....

(B) Label the opposite figure:

1. ....
2. ....
3. ....
4. ....
5. ....



4 (A) Correct the underlined words:

1. Human body is a good conductor of electricity as it contains gases. (....................)
2. Second class levers sometimes conserve effort. (....................)
3. Partial solar eclipse occurs when the Moon's cone shadow (umbra) does not reach Earth's surface. (....................)
4. Newton was the first scientist who described the levers. (....................)

(B) Compare:

Point of comparison	Solar eclipse	Lunar eclipse
Reason	....	....
Time of occurrence	....	....

Model (5)

20 Marks

1 (A) Choose the correct answer:

1. Force arm is sometimes equal to resistance arm in the .... class levers.

a) first b) second

c)third d) Both (b) and (c)

2. The duration of the lunar eclipse is .... that of the solar eclipse.

a) longer than b) shorter than

c) equal to d) no correct answer

3. Root hair absorbs most water by ....

a) imbibition b) osmosis

c) selective permeability d) no correct answer

4. Effort arm and resistance arm are measured in .... or ....

a) m, cm b) kg, gram

c) ton, kg d) L, ml

(B) Give a reason for the following:

- Lunar eclipse occurs in the middle of the lunar month. (Full Moon)

....

2 (A) Write the scientific term:

1. The fixed point on which the lever rotates. (............)
2. The area that lies between the real shadow area and the lighted area. (............)
3. Materials that don't allow the electric current to pass through. (............)
4. A way of connecting the electric lamps in which all the lamps are turned off when one of them burns out. (............)

(B) What happens when ...?

- Concentration of salts in the soil is higher than the concentration of salts in the vacuoles of the root hairs.

....

3 (A) Complete the following sentences:

1. Duration of lunar eclipse extends for more than .... hour(s).

2. .... phenomenon always occurs when .... blocks the sunlight from reaching a part of the Earth.

3. In the case of connecting the lamps in .... the lighting of the lamps decreases if their number increases.

4. Root hairs absorb salts from the soil by the property of ....

(B) Mention one function of:

- The points of connection in the fluorescent lamp.

....

4 (A) Choose from column (B) which suits in column (A):

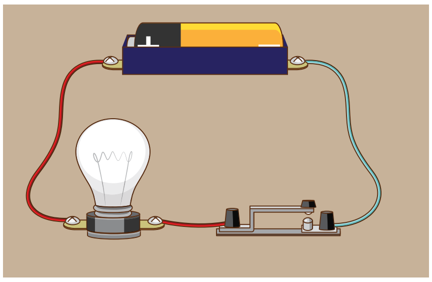
(A)	(B)
1. First class levers	a. are levers that always conserve the effort.
2. Second class levers	b. are levers that do not conserve the effort.
3. Third class levers	c. are levers that sometimes conserve the effort.
4. The fulcrum	d. is a fixed point that a rigid bar sits on.

1. .... 2. .... 3. .... 4. ....

(B) Look at the following figure, then answer the following questions:

a) The opposite circuit is a .... circuit.

b) .... opens and closes the electric circuit.



Model (1) Answers
20 Marks

1 (A) Choose the correct answer:

1. Lunar eclipse is formed in the .... of the lunar month.
   - a) beginning
   - b) middle
   - c) end
   - d) after 5 days
2. The fluorescent lamp contains the inert .... gas.
   - a) hydrogen
   - b) nitrogen
   - c) argon
   - d) helium
3. Which lever does not conserve effort? ....
   - a) Wheelbarrow
   - b) Nutcracker
   - c) Manual broom
   - d) Bottle opener
4. The last row of cortex layer is called .... layer.
   - a) cortex
   - b) endodermis
   - c) xylem
   - d) pith

(B) The exerted force of a balanced lever equals 50 Newton and the length of its arm is 2 cm if it is affected by a resistance with a value of 20 Newton, **calculate the length of its arm of resistance**. (Write the law)

Solution

Force × its arm = Resistance × its arm

$50 \times 2 = 20 \times .... =$

$\frac{50 \times 2}{20} = 5$ cm

2 (A) Complete the following sentences:

1. The nutcracker is a ....second .... class lever, while the scissors are ....first........ class lever.
2. The fluorescent lamps contain inert argon gas and a little amount of ....mercury vapor. ....
3. Impure water cannot be used to put out the fire resulting from ....electricity. ....
4. ....Epidermis .... is the external layer that the root hair extends from it.

(B) What happens when ...?

- Connecting more than one lamp in an electric circuit in parallel.

........The light intensity of the bulbs remains as it is. ....

3 (A) Write the scientific term for each of the following:

1. A tool used to convert the electric energy into light energy. (Electric lamp)
2. Fires that occur as a result of the increase in the temperature of electric wires. (Electric fires)
3. An astronomical phenomenon that occurs when the Earth, Sun and Moon are on one straight line and the Moon in the middle. (Solar eclipse)
4. The losing of water in the shape of water vapor from plant leaves. (Transpiration)

(B) Give a reason for the following:

- Crowbar is a first-class lever.

.... Because the fulcrum exists between the effort force and the resistance force. ....

4 (A) Correct the underlined words:

1. Copper and iron are <u>electric insulators</u>. (electric conductors)
2. To connect lamps in <u>parallel</u>, they are connected one after the other. (series)
3. In the <u>first</u> class levers the resistance force is between fulcrum and effort force. (second)
4. Umbra is a <u>semi-dark</u> area where the total solar eclipse occurs. (dark)

(B) Compare:

Point of comparison	2nd class levers	3rd class levers
Definition	They are levers where the resistance force lies between the fulcrum and the effort force.	They are levers where the effort force lies between the fulcrum and the resistance force.
Examples	Bottle opener, wheelbarrow and nutcracker.	Ice holder, fishing hook and manual broom.

Model (2) Answers

20 Marks

1 (A) Complete the following sentences:

1. Tweezers are considered a ....third........ class lever but the wheelbarrow is a ....second........ class lever.
2. There are two ways for connecting lamps, connecting in ....series........ and ....parallel. ....
3. .... Carbon dioxide........ gas is produced during the photosynthesis process.
4. Electric shock occurs as a result of the passing of ....electric current .... through the human body.

(B) Give a reason for the following:

- We should not look at the Sun with the naked eye during the solar eclipse.

.... Because the outer solar corona keeps on emitting harmful rays (UV-IR) which cause blindness for few minutes. ....

2 (A) Put (✓) or (✗):

1. Lunar eclipse causes harms to the eyes. (✗)
2. We must not play with electric connections. (✓)
3. Plant loses water in the form of water vapor in the photosynthesis process. (✗)
4. The human body is a conductor of electricity. (✓)

(B) What happens when ...?

- There are no stomata on the lower surface of the plants' leaves.

.... Plant won't be able to do the transpiration process. ....

3 (A) Write the scientific term for each of the following:

1. Vessels through which water passes from the root to the stem and leaves. (Xylem)
2. One of the dangers of electricity that causes damage of body tissues. (Electric shock)
3. It is the force exerted by a person to equilibrate the resistance. (Effort force)
4. The distance between fulcrum and resistance. (Resistance arm)

(B) A first lever is affected by 10 Newton force with an arm of length 10 cm and a resistance of 20 Newton.

a. **Calculate the length of arm of resistance.**

Solution

Force × its arm = Resistance × its arm

10 × 10 = 20 × .... =

$\frac{10 \times 10}{20} = 5$ cm

b. Does the lever save effort? Why?

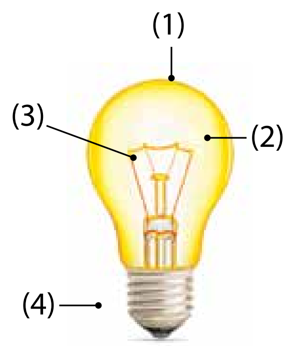
This lever saves effort because the effort force is smaller than the resistance force.

4 (A) Correct the underlined words:

1. In the beginning of the total lunar eclipse, the color of the Moon tends to be <u>black</u>. (red)
2. There are <u>three</u> connecting points at each end of the light bulb ends. (two)
3. The glass bulb of the electric lamp contains <u>hydrogen</u> gas. (argon)
4. <u>Oxygen</u> gas is produced during the respiration process in the plant. (Carbon dioxide)

(B) Label the opposite figure:

1. ....glass bulb ....
2. ....Argon gas.........
3. ....Tungsten filament.........
4. ....The base of the lamp.........



Model (3) Answers
20 Marks

1 (A) Choose the correct answer:

1. Which of the following gases is found in the fluorescent lamp but not in the light bulb?
   a) Argon gas. b) Neon gas.
   c) Mercury vapor. d) oxygen gas.

2. ………………………… is/are considered first class lever.
   a) Wheelbarrow b) Pliers
   c) Manual broom d) coal holder

3. ………………………… is one of the functions of levers.
   a) Increasing force b) Decreasing distance
   c) Decreasing speed d) all the previous answers

4. Each stoma is surrounded by two ………………………… cells.
   a) animal b) guard
   c) absorbing d) leaf

(B) Write the function or importance of:

- The glass bulb of the light bulb.

……… It prevents the atmospheric air from reaching the filament to increase its lifetime ……… and protect it from burning. ………

2 (A) Put (✓) or (✗):

1. Fires resulted from electricity are extinguished by water. (✗)
2. The root extends and penetrates the soil to absorb water. (✓)
3. The soda water opener is a second-class lever. (✓)
4. When the whole Moon enters the semi-shaded area of Earth, the Moon seems without eclipse. (✓)

(B) What happens when ...?

- A part of your body touches an electric source directly.

……… This causes electric shock which may damage the body tissues. ………

3 (A) Write the scientific term:

1. Small holes that are widely spread on the lower surface of the leaf. (Stomata)
2. It occurs when part of the Moon enters the Earth's umbra. (Partial lunar eclipse)
3. A rigid bar that rotates around a fixed point and is affected by a force and a resistance. (Lever)
4. A vital process carried out by the plant to produce its own food. (Photosynthesis process)

(B) What is meant by ...?

- Annular solar eclipse:

.... It is the type of solar eclipse in which the Sun appears as a lighted ring. ....

4 (A) Complete the following sentences:

1. ....Copper....... and ....aluminum....... are examples of materials that are electric conductors.
2. The filament of the light bulb is made of ....tungsten....... and that is because it has high .... melting point. ....
3. ....Guard cells....... control the closing and opening of the stomata.
4. The lunar eclipse occurs when the ....Earth .... lies between the Sun and ....the Moon. ....

(B) Arrange the layers of the root from inside to outside:

(Xylem – Cortex – Pith – Endodermis – Epidermis)

...........(Epidermis – Cortex – Endodermis – Xylem – Pith)...........

Model (4) Answers

20 Marks

1 (A) Choose the correct answer:

1. The concentration of the salt solution inside the vacuole is .... the concentration of the salt solution inside the soil.

   a) less than — b) more than

   c) equal to — d) no correct answer

2. Water transfers from the root to the stem through the .... layer.

   a) cortex — b) epidermis

   c) endodermis — d) xylem

3. .... is the main source of light on Earth.

   a) Candle — b) Fire

   c) Lamp — d) Sun

4. The function of a lever is to increase ....

   a) force — b) distance

   c) speed — d) all the previous answers

(B) What happens when ...?

- There is no battery in the electric circuit.

.... There will be no electric source and the lamp will not light up. ....

2 (A) Choose from column (B) which suits in column (A):

(A)	(B)
1. Most electric machines produce	a. the partial lunar eclipse occurs.
2. Coal holder is a lever used to	b. heat.
3. Electric lamp is prevented from air to burn its filament by	c. avoid dangers.
4. When a part of the Moon enters the shadow area of the Earth,	d. the glass bulb.

1. ....b......... 2. ....c......... 3. ....d......... 4. ....a.........

(B) Give a reason for the following:

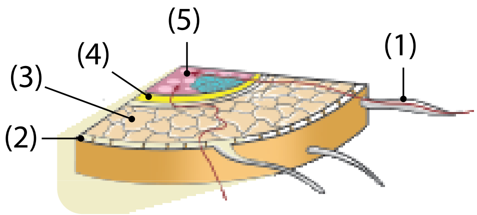
- Light is important for the plant.

..........To make its food during photosynthesis process. ....

3 (A) Complete the following sentences:

1. The manual broom is an example of the ....third .... class levers.
2. ....Fulcrum .... is a fixed point that a rigid bar rotates on.
3. In the case of connecting the lamps in ....series .... the lighting of the lamps decreases if their number increases.
4. Green plants consist of two main parts which are ....shoot system .... and .... root system. ....

(B) Label the opposite figure:



1. ....Root hair ....
2. ....Epidermis............
3. ....Cortex............
4. ....Xylem vessels ....
5. ....Pith............

4 (A) Correct the underlined words:

1. Human body is a good conductor of electricity as it contains <u>gases</u>. (water)
2. <u>Second</u> class levers sometimes conserve effort. (first)
3. <u>Partial</u> solar eclipse occurs when the Moon's cone shadow (umbra) does not reach Earth's surface. (Annular)
4. <u>Newton</u> was the first scientist who described the levers. (Archimedes)

(B) Compare:

Point of comparison	Solar eclipse	Lunar eclipse
Reason	It occurs when the Moon lies between the Earth and the Sun on one straight line.	It occurs when the Earth lies between the Sun and the Moon on one straight line.
Time of occurrence	Daytime (in the morning).	Nighttime The Sun is behind the horizon.

Model (5) Answers (20 Marks)

1 (A) Choose the correct answer:

1. Force arm is sometimes equal to resistance arm in the .... class levers.
   a) first b) second
   c)third d) Both (b) and (c)

2. The duration of the lunar eclipse is .... that of the solar eclipse.
   a) longer than b) shorter than
   c) equal to d) no correct answer

3. Root hair absorbs most water by ....
   a) imbibition b) osmosis
   c) selective permeability d) no correct answer

4. Effort arm and resistance arm are measured in .... or ....
   a) m, cm b) kg, gram
   c) ton, kg d) L, ml

(B) Give a reason for the following:

- Lunar eclipse occurs in the middle of the lunar month. (Full Moon)

... Because in the middle of the lunar month the Earth lies between the Sun and the Moon. ...

2 (A) Write the scientific term:

1. The fixed point on which the lever rotates. (Fulcrum)
2. The area that lies between the real shadow area and the lighted area. (Penumbra)
3. Materials that don't allow the electric current to pass through. (Electric insulators)
4. A way of connecting the electric lamps in which all the lamps are turned off when one of them burns out. (Series connection)

(B) What happens when ...?

- Concentration of salts in the soil is higher than the concentration of salts in the vacuoles of the root hairs.

.... Water will transfer from the root to the soil and the plant will wilt and die. ....

3 **(A) Complete the following sentences:**

1. Duration of lunar eclipse extends for more than ....two.............. hour(s).
2. ....Solar eclipse .... phenomenon always occurs when .... the Moon .... blocks the sunlight from reaching a part of the Earth.
3. In the case of connecting the lamps in ....series....... the lighting of the lamps decreases if their number increases.
4. Root hairs absorb salt from the soil by the property of .... selective property. ....

(B) Mention one function of:

- The points of connection in the fluorescent lamp.

.......They connect the fluorescent lamp to electricity. ....

4 **(A) Choose from column (B) which suits in column (A):**

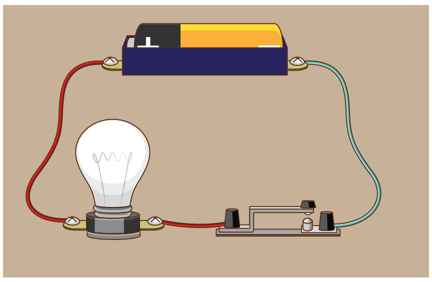
(A)	(B)
1. First class levers	a. are levers that always conserve the effort.
2. Second class levers	b. are levers that do not conserve the effort.
3. Third class levers	c. are levers that sometimes conserve the effort.
4. The fulcrum	d. is a fixed point that a rigid bar sits on.

1. ....c.......... 2. ....a.......... 3. ....b.......... 4. ....d..........

(B) Look at the following figure, then answer the following questions:

a) The opposite circuit is a ....closed.......... circuit.

b) ....Switch .... opens and closes the electric circuit.



School Exams on the Second Term 2018/2019

(Answer Guide P. 24)

Note: The questions marked by (★) are modified to the latest MOE on curriculum.

1 Cairo - Shoubra Educational Directorate

1 **A) Choose the correct answer:**

1. Which of the following gases is found in the fluorescent lamp but not in the light bulb? - ....
   a. Argon gas. b. Neon gas c. Mercury vapor
2. Electric wires are covered with ....
   a. copper b. plastic c. aluminum
3. .... is/are considered first class lever.
   a. Wheelbarrow b. Pliers c. Manual broom
4. The duration of the solar eclipse does not exceed ....
   a. 5 minutes b. 7 seconds and few minutes c. 7 minutes and few seconds

B) Correct the underlined words:

1. Human body is a good conductor of electricity as it contains gases. (..................)
2. Second class levers sometimes conserve effort. (..................)
3. Partial solar eclipse occurs when the Moon's cone shadow (umbra) does not reach Earth's surface. (..................)
4. Newton was the first scientist who described the levers. (..................)
5. ★Stoma is surrounded by two wooden cells. (..................)

2 **A) Put (✓) or (✗):**

1. In the start of the total lunar eclipse, the color of Moon tends to be red due to the red rays that can be absorbed form above the atmosphere of Earth. (   )
2. The phenomenon of solar and lunar eclipse attracts people's attention because it affects life on Earth. (   )
3. When the whole Moon enters the semi-shaded area of Earth, the Moon seems without eclipse. (   )
4. Fire result from electricity is extinguished by sand. (   )
5. ★The root extends and penetrates the soil to absorb water. (   )

B) Complete the following table:

P.O.C	Solar eclipse	Lunar eclipse
Reason	....	....
Time of occurrence	....	....

4. A third class lever with a force arm of length 2 cm, and the length of the arm of the resistance is 6 cm. If the resistance has a value of 20 Newton, calculate the value of the affecting force and mention if this lever conserves effort or not. And why?

....

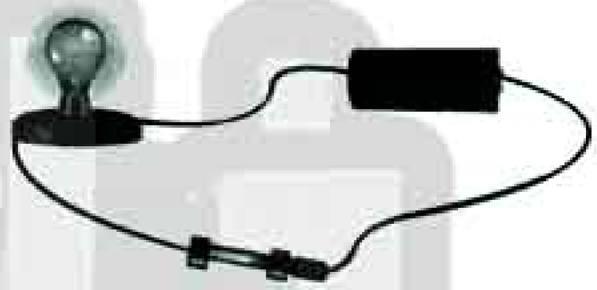
3 **A) Complete the following sentences:**

1. Filament of light bulb is made of .... and that is because its .... is high.
2. From examples of levers that are used to avoid dangers are .... and ....
3. .... eclipse occurs when the .... is located between the Sun and Earth.

B) Mention one function of:

1. Tweezers: ....
2. The points of connection in the fluorescent lamp: ....
3. Stomata: ....

C) In the following figure, answer the following questions:



a. The electric circuit is .... circuit.

b. What is the way of connection if three lamps are connected one after the other in one route in this circuit?

4 **A) Write the scientific term in front of the following:**

1. Levers that have the resistance between the fulcrum and effort force. (....................)
2. One of the dangers of electricity that causes damage of body tissues. (....................)
3. It is the force exerted by a person to equilibrate the resistance. (....................)
4. Type of solar eclipse in which we can't see the Sun completely. (....................)

B) Give a reason for each of the following:

1. We shouldn't look directly at the Sun with the naked eye during the solar eclipse.

....

2. Plugging more than one machine to one socket causes electric fire.

....

3. ★ The concentration of salt solution inside the vacuole is greater than the concentration of salt solution in the soil.

....

C) What happens when ...?

1. You insert a metallic bar in an electric socket.

....

2. The Moon lies in a higher orbit from the Earth.

....

2 Cairo - Educational Zone - Official Language Schools

1 A) Complete the following sentences:

1. Manual broom is considered a .... class lever, but the crowbar is a .... class lever.
2. The type of levers that always do not conserve effort is ...., while the type of levers that always conserve effort is ....
3. The filament of the light bulb is made of .... and that is because it has high ....
4. The electric shock occurs as a result of passing .... through the ....
5. ★ .... phenomenon always occurs when .... blocks the sunlight from reaching a part of the Earth.

B) Give a reason for each of the following:

1. There are two pieces of lead in the light bulb.
....
2. Plugging more than one machine to one socket causes electric fires.
....
3. ★ The presence of stomata on the lower surface of the plant leaves.
....

2 A) Write the scientific term in front of the following:

1. A rigid bar that rotates around a fixed point and is affected by a force and a resistance. (..................)
2. Levers that sometimes conserve the effort. (..................)
3. One of the dangers of electricity is causing the damage of tissues of the body. (..................)
4. It occurs to the Moon when it completely enters the umbra area of the Earth. (..................)
5. A way of connecting light bulbs in branching routes. (..................)
6. Levers in which the resistance force lies between the effort force and the fulcrum. (..................)

B) A 2^{nd} class lever of force 100 Newton, its force arm of length is 25 cm and its resistance is 500 Newton; calculate the resistance arm.

....
....

3 A) Choose the correct answer:

1. .... is a fixed point that a rigid bar sits on.
   a. Force   b. Fulcrum   c. Resistance
2. The fluorescent lamp contains .... gas.
   a. hydrogen   b. nitrogen   c. argon
3. .... is one of the functions of levers.
   a. Increasing force   b. Decreasing distance   c. Decreasing speed
4. .... is an example of materials that are electric conductors.
   a. Wood   b. Plastic   c. Iron
5. ★ Each stoma is surrounded by two .... cells.
   a. animal   b. guard
   c. absorbing   d. leaf

B) Write the function or importance of:

1. The inert gas in the electric lamp.

   ....
2. The glass bulb of the light bulb.

   ....
3. ★ The root system of the plant.

   ....

4 A) Put (✓) or (✗):

1. Fires resulted from electricity are extinguished by water. (   )
2. The lunar eclipse occurs at the end of the lunar month. (   )
3. The soda water opener is a second class lever. (   )
4. We look at the Sun directly through the solar eclipse. (   )
5. The distance between resistance and fulcrum is called resistance arm. (   )
6. The human body is a conductor of electricity. (   )

B) What happens when ...?

1. Connecting more than one lamp in an electric circuit in parallel.

   ....
2. The electric lamp contains the atmospheric air.

   ....
3. ★ The Moon completely enters the semi-shaded area of the Earth.

   ....

Worksheets & Exams

3 Cairo - El Sherouq Zone - Mena Language School

1 **A) Write the scientific terms:**

1. Levers that have the force between the resistance and the fixed point. (..............................)
2. Means of converting the electric energy to light energy. (..............................)
3. One of the dangers of the electricity is that it destroys the tissues of the body. (..............................)
4. It occurs when the Moon comes between the Earth and the Sun on one straight line. (..............................)
5. ★ A vital process carried out by the plant to produce its own food. (..............................)

B) The force affecting a second class lever equals 200 Newton and the length of its arm is 50 cm and a resistance with a value of 1000 Newton, calculate the value of the arm of the resistance.

....

....

....

2 **A) Complete the following sentences:**

1. .... and .... are examples of the first class levers.
2. The law of levers states that ....
3. The fluorescent lamp contains .... gas.
4. .... and .... are examples of materials that are electric conductors.

B) Compare between the solar eclipse and the lunar eclipse:

Solar eclipse	Lunar eclipse
....	....
....	....
....	....
....	....
....	....
....	....
....	....

3 A) Give a reason for:

1. There are two pieces of lead in the light bulb.

....

....

....

....

2. Not placing flammable materials too close to the electric machines that generate heat.

....

....

....

....

B) Correct the underlined words:

1. The electric lamp converts the electric energy to the kinetic energy. (..................)
2. There are three connecting points at each end of the light bulb ends. (..................)
3. The glass bulb of the electric lamp contains hydrogen gas. (..................)
4. The electric lamps are connected in the house in series. (..................)
5. ★ Leaves extend in the soil and penetrate it to increase the surface area of absorption. (..................)

4 A) Put (✓) or (✗):

1. The first class levers has the resistance between the force and the fulcrum. (   )
2. More than one type of solar eclipse can be observed. (   )
3. The crowbar is an example of the first class levers. (   )
4. ★ Plant loses water in the form of water vapor in the photosynthesis process. (   )

B) What happens when ...?

1. You make the filament of the light bulb from iron.

....

....

2. There is air inside the light bulb.

....

....

Worksheets & Exams

4 Giza - Dokki Educational Directorate

1 A) Choose the correct answer:

1. Which of the following levers saves effort? - ....
   a. Scissors b. Nutcracker c. Sweet holder d. Coal holder
2. The electric wires must be covered with ....
   a. glass b. copper c. wood d. plastic
3. The phenomenon of the lunar eclipse occurs in the .... of the lunar month.
   a. middle b. end c. beginning d. quarter
4. .... occur(s) when placing flammable materials near to electric machines that generate heat.
   a. Electric shock b. Electric burn c. Electric fire d. Indirect injuries

B) A first lever is affected by 10 Newton force with an arm of 10 cm length and a resistance of 20 Newton.

a. Calculate the length of arm of resistance.

....

b. Does the lever save effort? Why?

....

C) What happens when ...?

1. The whole Moon enters the semi-shaded area of the Earth.

....

2. The filament of the electric lamp is made of iron.

....

3. ★ The cell membrane of the root hairs of the plant is not found.

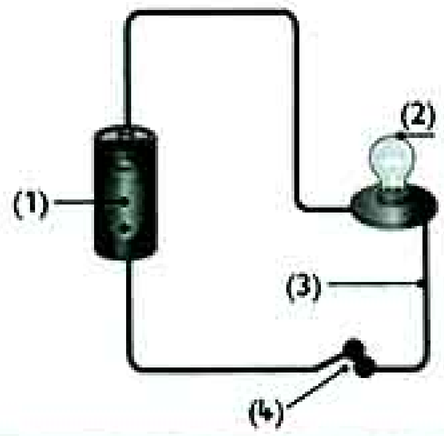
....

2 A) Complete the following sentences:

1. The crowbar is considered as a .... class lever, while the nutcracker is considered as a .... class lever.
2. The light bulbs in the house are connected in ....
3. Electric shock occurs as a result of passing .... through the human body.
4. The solar eclipse occurs when the .... lies between Sun and ....

B) Write the labels of this figure:

1. ....
2. ....
3. ....
4. ....



C) What is meant by ...?

1. Direct injuries: ....
2. Annular solar eclipse: ....

3 A) Give a reason for:

1. Water is not used to put out electric fires.

....

2. There must be a switch in the electric circuit.

....

3. We should not look at the Sun with the naked eye.

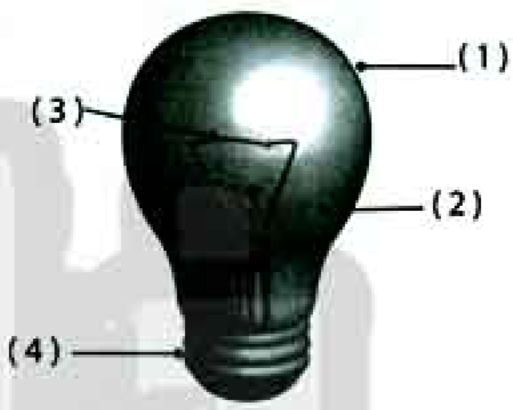
....

4. The force may be equal to the resistance in the first class levers.

....

B) Label the opposite figure:

1. ....
2. ....
3. ....
4. ....



4 A) Write the scientific term for the following:

1. The fixed point on which the lever rotates. (..........)
2. The area that lies between the real shadow area and the lighted area. (..........)
3. Materials that don't allow the electric current to pass through. (..........)
4. A way of connecting the electric lamps in which all the lamps are turned off when one of them burns out. (..........)

B) Correct the mistake in each of the following sentences:

1. Plugging more than one machine to one socket causes electric shock. (..........)
2. A fluorescent lamp contains the inert neon gas. (..........)
3. Special glasses are used to observe the lunar eclipse. (..........)
4. Electric wires are made of plastic. (..........)

C) Complete between the solar eclipse and the lunar eclipse:

P.O.C	Solar eclipse	Lunar eclipse
Duration	....	....
Harms	....	....

5 Giza - Giza Educational Administration - Orman Language School

1 A) Complete the following sentences:

1. The nutcracker is a .... class lever, while the scissors are .... class lever.
2. The fluorescent lamps contain inert argon gas and a little amount of ....
3. Impure water cannot be used to put out the fire resulting from ....
4. The solar eclipse occurs when the .... comes between the Earth and the Sun on the same straight line.
5. ★ The .... in plant is surrounded by two guard cells.

B) What happens when ...?

1. The arm of resistance is longer than the arm of force of a lever.

....

2. Connecting more than one lamp in an electric circuit in parallel.

....

2 Choose the correct answer:

1. Which of the following gasses is found in the fluorescent lamp but not in the light bulb?
   - .... (Neon – Argon – Mercury vapor)
2. Which of the following levers has the force between the resistance and the fulcrum?
   - .... (Nutcracker – Scissors – Sweet holder)
3. .... class levers never save effort. (First – Second – Third)
4. The filament of the light bulb is made of .... (iron – copper – tungsten)
5. ★ .... is responsible for the photosynthesis process. (Root system – Shoot system – Cytoplasm)

3 A) Write the scientific term:

1. A tool used for converting the electric energy to light energy. (..............................)
2. Fires that occur as a result of the increase in the temperature of the electric machines. (..............................)
3. It occurs to the Moon when it completely enters the shadow area of the Earth. (..............................)
4. The fixed point of a rigid bar. (..............................)
5. ★ The outer layer of the root of the plant. (..............................)

B) The force arm length of a third class lever is 5 cm and the length of the arm of the resistance is 15 cm. If the resistance has a value of 300 Newton, calculate the value of the affecting force.

....

....

....

....

4 A) Correct the underlined words:

1. <u>Second</u> class levers always don't conserve effort. (..............................)
2. <u>Annular</u> solar eclipse occurs in the shadow area of theMoon. (..............................)
3. Although crowbar is a <u>third</u> class lever, it conserves effort. (..............................)

B) Look at the opposite two figures (A & B), then answer in spaces below each one as required?

1. What is the way of connection in each circuit?
2. What happens when the light bulb number (2) in each circuit burns out?

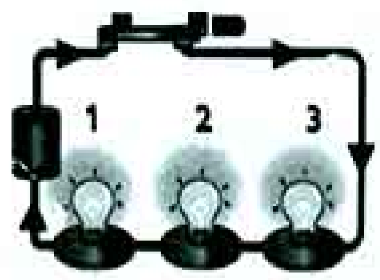


Figure (A)

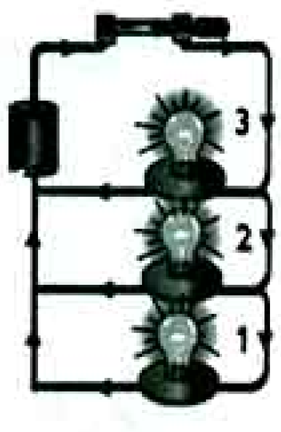


Figure (B)

Worksheets & Exams

6 Giza - Abo El-Nomrous Educational Zone - Ahmos Language School

1 A) Complete:

1. The light bulb consists of filament, ... and ....
2. From precaution in dealing with electricity .... and ....
3. The lunar eclipse occurs when the Sun, Earth and .... in one straight line and .... in the middle.
4. ★ The type of solar eclipse differs due to the movement of .... in front the Sun.
5. ★ Plants make their own food during .... process.

B) Classify the following machines according to the type of levers:

1. Bottle opener
2. Hockey bat
3. Water opener
4. Tweezers
5. Wheelbarrow
6. Nutcracker

2 A) Write the scientific term:

1. A tool used to convert the electric energy into light energy. (........................)
2. Fires that occur as a result of the increase in the temperature of electric wires. (........................)
3. An astronomical phenomenon that occurs when the Earth, Sun and Moon are on one straight line and the Moon in middle. (........................)

B) Correct the underlined words:

1. Copper and iron are electric insulators. (........................)
2. To connect lamps in parallel, they are connected one after another. (........................)
3. In the first class levers the resistance force is between fulcrum and effort force. (........................)
4. ★ Umbra is a semi-dark area where the total solar eclipse occurs. (........................)
5. ★ Transpiration is losing of water in the shape of water droplets. (........................)

3 A) Choose the correct answer:

1. When the whole Moon enters the shadow area (umbra) of Earth, ... occurs.
   a. partial lunar eclipse
   b. total lunar eclipse
   c. total solar eclipse
   d. partial solar eclipse
2. Water can't be used to put out electric fires because it is ....
   a. a good conductor of electricity
   b. a bad conductor of electricity
   c. not cold
   d. may evaporate
3. Which of the following gases is found in the fluorescent lamp but not in light bulb? ....
   a. Neon
   b. Argon
   c. Mercury vapor
   d. Water vapor
4. ★ We can see a part of the Sun in the ....
   a. umbra
   b. penumbra
   c. all the previous answers
   d. no correct answers

B) Give a reason for:

1. The second class lever always conserves effort.

....

2. We shouldn't look at the Sun directly with the naked eye during the solar eclipse.

....

3. ★ The cell membrane of root hairs has a selective permeability property.

....

4 A) The length of the force arm of a third class lever is 5 cm and the length of the arm resistance is 15 cm if the resistance has value of 300 Newton, calculate the value of affecting force.

B) Choose from column A what suits it from column B:

(A)	(B)
1. From indirect injuries is	a) Thomas Alpha Edison.
2. Who invented the light bulb?	b) to avoid dangers.
3. From the importance of lever is	c) falling from top of a ladder.

C) ★ Compare between:

Osmosis property and selective permeability.

7 Giza - Boulak El-Dakrour Administration - Dar El-Hanan Language School

1 **A) Complete the following question:**

1. The filament of the light bulb is made of .... because it has high ....
2. The .... lead to destroying the tissue of the body.
3. .... occurs when a part of the Moon enters the Earth's umbra.
4. ★ Root hairs extend from the .... and are lined from inside with a thin layer of ....

B) Give a reason for:

1. We shouldn't look directly at the Sun with the naked eye during the solar eclipse.

....

2. The glass bulb in the light bulb is filled with inert argon gas instead of air.

....

2 **A) Write the scientific term:**

1. A rigid bar that rotates on a fixed point and is affected by a force and resistance. (....................)
2. The type of levers that do not save effort. (....................)
3. A way of connecting the lamp and machines in houses. (....................)
4. The solar eclipse in which the Sun disappears completely. (....................)

B) What's the importance of ...?

1. The first class lever.

....

2. ★ Stomata.

....

3 A) Problem:

The force of 50 N affected a lever of the second class whose force arm is 20 cm, calculate the resistance if the arm of the resistance equals 5 cm.

....

....

B) Correct the underlined words:

1. The electric lamp converts the electric energy into kinetic energy. (..................)
2. Wood is considered a good conductor of electricity. (..................)
3. The penumbra is the dark inner shadow area where the total solar eclipse occur. (..................)
4. ★ Plant absorbs nitrogen gas during the photosynthesis process. (..................)

4 A) Compare:

Point of comparison	2nd class levers	3rd class levers
Definition	....	....
Example	....	....

B) What happens when ...?

1. The electric lamp contains the atmospheric air.

....

....

....

2. You insert a metallic bar in an electric socket.

....

....

....

8 Alexandria - Al-Montazah Directorate - El-Rahman Language School

1 A) Write the scientific term:

1. A flow of electric charges that passes through a conducting material. (..................)
2. Levers in which effort force lies between the resistance force and the fulcrum. (..................)
3. An area that if the whole Moon is located in, there will be no eclipse. (..................)
4. It is a way in which the light bulbs are connected one after another in one route. (..................)
5. Distance between the effort force and the fulcrum. (..................)
6. Closed and continuous path through which electric current passes making a complete cycle. (..................)

B) Give a reason for:

1. Lamps are connected in parallel at home.
....
2. There is no annular lunar eclipse.
....
3. Crowbar is a first class lever.
....

2 A) What happens when ...?

1. Force arm equals resistance arm.
....
2. A part of the Moon enters shadow area of the Earth.
....
3. Filament of the light bulb is made of iron.
....

B) Problems:

- A lever has an effort force of 50 Newton, and the length of its force arm is 20 cm. If it is affected by a resistance force of 20 Newton, then:

a. Calculate the length of resistance arm.
....

b. Does this lever conserve effort or not? And why?
....

3 Complete the following sentences:

1. Glass tube of the fluorescent lamp is filled with .... and ....
2. The duration of solar eclipse is about ...., while duration of lunar eclipse is about ....
3. .... and .... are some of the dangers of direct electricity.
4. The lever is a .... bar that rotates around a fixed point called ....
5. The wheelbarrow is a .... class lever, while the paddle is a .... class lever.
6. There are two types of lamp bases: .... base and .... base.

4 A) Correct the underlined words:

1. The human body is a good conductor of electricity as it contain gases. (....................)
2. Plugging more than one machine to one socket causes electric burn. (....................)
3. During the start of total lunar eclipse, the Moon tends to be yellow. (....................)
4. The third class lever always saves effort. (....................)
5. The simple electric circuit consists of a battery, a lamp and an insulator . (....................)
6. ★ The plant loses water in form of water vapor during the photosynthesis process. (....................)

B) What is meant by ...?

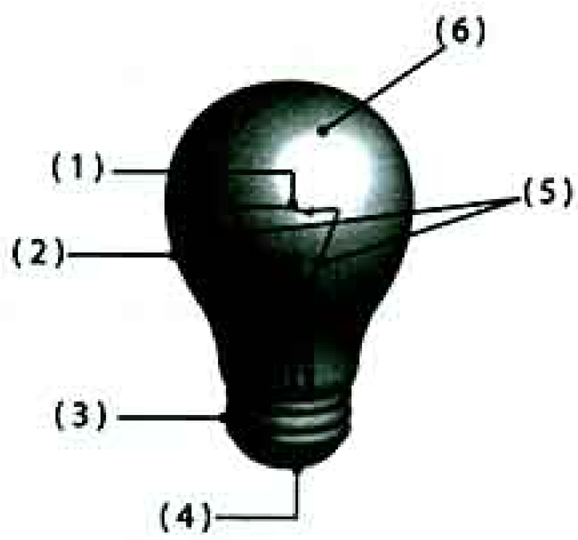
- The solar eclipse.

....

....

C) Label the following figure:

1. ....
2. ....
3. ....
4. ....
5. ....
6. ....



9 Alexandria - Al-Montazah Directorate

1 A) Complete the following question:

1. Tweezers are considered a .... class lever but the wheelbarrow is a .... class lever.
2. There are two ways for connecting lamps, connecting in .... and connecting in ....
3. The light bulb consists of the tungsten filament, ... and ....
4. The solar eclipse phenomenon occurs when the .... is located between the .... and the Sun on one straight line.
5. ★ Root hairs absorb water from the soil by the property of ....

B) The exerted force of a balanced lever equals 50 Newton and the length of its arm is 2 cm and is affected by a resistance with a value of 20 Newton, calculate the length of the arm of its resistance.

(Write the law).

....

....

2 A) Correct the underlined words:

1. The hockey bat is used to decrease speed. (..................)
2. The phenomenon of lunar eclipse occurs in the starting of the lunar month. (..................)
3. The first scientist who described the lever is Newton. (..................)
4. The force is a fixed point that the bar rotates on. (..................)

B) Give a reason for:

1. The filament of the light bulb is made of tungsten.

....

2. The first class levers sometimes conserve effort.

....

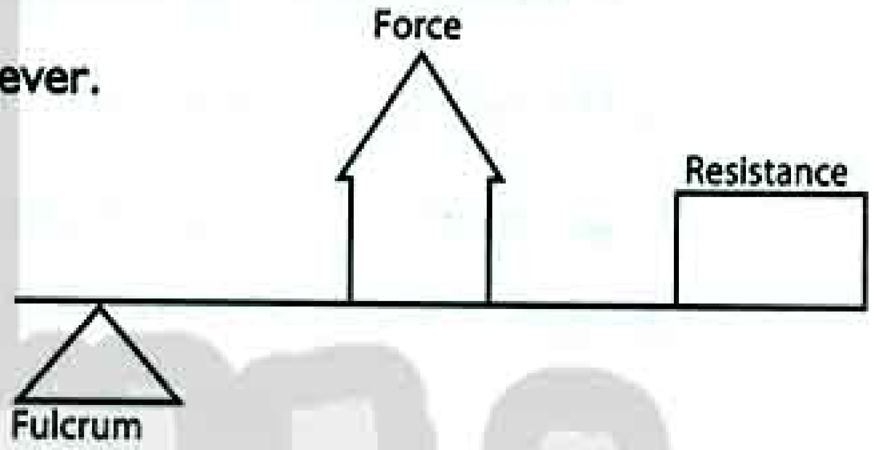
3. ★ Each stoma is surrounded by two guard cells.

....

3 A) Write the scientific term:

1. Means of converting the electric energy to light energy. (..................)
2. The lever used for moving the force and increasing distance. (..................)
3. The phenomena that occurs when the entire Moon falls in the shadow of the Earth. (..................)
4. One of the dangers of electricity that occurs as a result of the increase in the temperature of the electric machines. (..................)

B) Look at the opposite figure, then answer the following questions:



1. The opposite figure represents a .... class lever.
2. Does this lever conserve effort?
3. Give reasons for your answer.

4 A) Choose the correct answer:

1. The fluorescent lamp contains a little of .... (oxygen – nitrogen – mercury vapor)
2. The duration of the solar eclipse does not exceed .... (seven minutes – an hour – 2 hours)
3. The resistance is between the force and the fulcrum in the .... class lever. (first – second – third)
4. When we connect light bulb in an electric circuit in series with increasing the number of bulbs, lightening of the bulbs .... (decreases – increases – remains constant)
5. ★ The cell membrane of the plant's root hair is characterized by .... (photosynthesis – selective permeability – transpiration)

B) What happens if ...?

1. You insert a metal bar in an electric socket.

....

2. Someone looks at the Sun directly with the naked eye for a long time, while observing the solar eclipse.

....

Worksheets & Exams

10 Dakahlia - Dakahlia Educational Directorate

1 A) Write the scientific term:

1. One of the dangers of the electricity is that it destroys the tissue of the body. (..................)
2. It occurs when the Moon comes between the Earth and the Sun on one straight line. (..................)
3. It's the measuring unit of resistance and force of effort. (..................)
4. The materials that allow the flow of electricity through them. (..................)
5. A way of connecting the lamps and machines in houses. (..................)
6. The levers that sometimes conserve effort. (..................)
7. ★ The process by which plants lose the excess water. (..................)

B) A third class lever of 200 Newton force and its arm is 5 cm affects on a resistance of 100 Newton, calculate the length of the resistance arm that makes the lever balanced.

C) Mention two functions of the levers.

1. .... 2. ....

2 A) Choose the correct answer:

1. Lunar eclipse is formed in the .... of the lunar month.
   a. beginning b. middle c. end d. after 5 days
2. The fluorescent lamp contains the inert .... gas.
   a. hydrogen b. nitrogen c. argon d. helium
3. Which lever does not conserve effort? - ....
   a. Wheelbarrow b. Nutcracker c. Manual broom d. Bottle opener
4. Electric .... results when your body is a part of an electric circuit.
   a. fire b. shock c. burn d. insulator
5. Plugging many appliances to one socket .... may cause.
   a. heating up of wires b. electric overload c. fires d. (a), (b), (c)
6. All the following materials allow the flow of the electric current except ....
   a. iron b. aluminum c. rubber d. copper
7. ★ The last row of cortex layer is called ....
   a. cortex b. endodermis c. xylem d. pith

B) Give a reason for:

1. We should not look directly at the Sun with the naked eye during the solar eclipse.
....
2. There are two points of connection at each tip of the fluorescent lamp.

3

A) Complete the following sentences:

1. During lunar eclipse, ... lies between .... and ....
2. The filament of the lamp is made of .... as it has .... point.
3. The electric current has only one path when the light bulbs are connected in ....
4. In the .... area of the shadow, the light source cannot be seen completely.
5. You cannot put out the electric fire with water because water is .... of electricity.

B) What happens when ...?

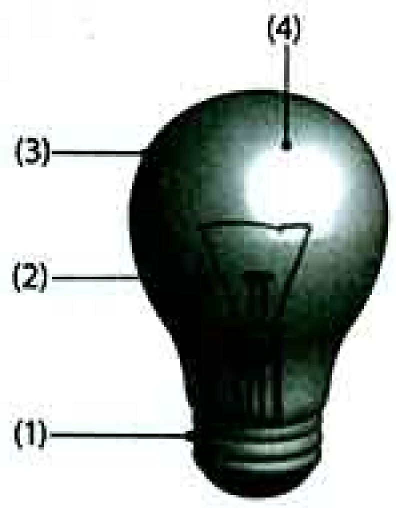
1. The whole Moon enters the semi-shaded area of the Earth.
....
2. One of the electric lamps burns out, while it is connected in parallel with the other.
....
3. ★ The absence of guard cells which surround the stomata in the plant's leaf.
....

4

A) Put (✓) or (✗):

1. If the arm of force is shorter than the arm of resistance, then the lever conserves effort. (   )
2. You must leave an electric machine connected with the electric current while taking a bath. (   )
3. The Moon is colored in blue at the start of the total lunar eclipse. (   )
4. Coal holder is used to avoid dangers. (   )
5. The human body is a good conductor of electricity. (   )
6. The electric lamp converts the light energy to electric energy. (   )

B) Look at the figure, then write the labels:



1. ....
2. ....
3. ....
4. ....

C) Write components of the simple electric circuit:

1. ....
2. ....
3. ....
4. ....

Worksheets & Exams

11 Kafr El-Sheikh - Directorate of Education

1 A) Choose the correct answer:

1. Duration of lunar eclipse extends for more than (6 – 4 – 2)........................ hours.
2. The filament inside the electric lamp is made of (aluminum – tungsten – iron)........................
3. The scissors are two levers of the (first – second – third)........................ class lever.
4. Solar eclipse always occurs (during day – during night – at dawn)........................
5. ★ Losing water from plant is called the .... process. (photosynthesis – transpiration – osmosis)

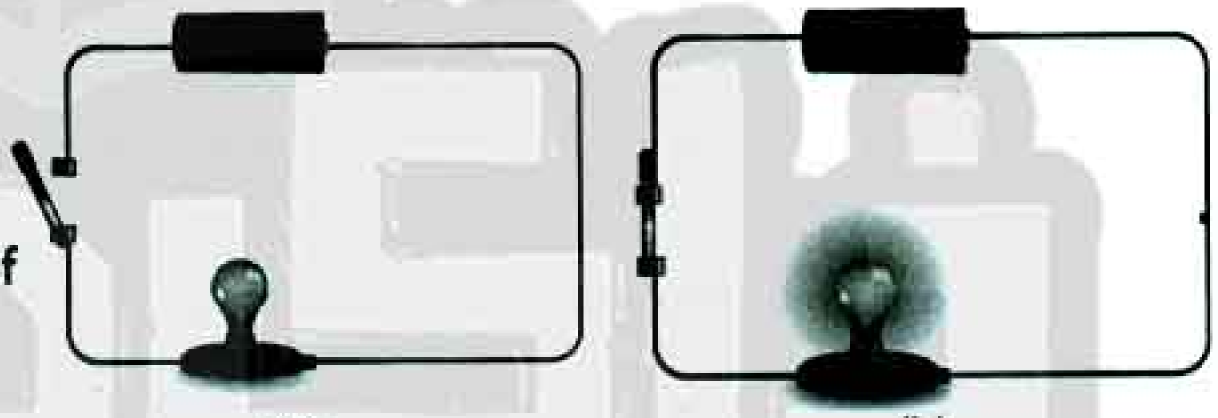
B) The device which is drawn is well-known:

1. Give a name to this device.

....

2. What happens in case that any of the parts are not connected?

....



(a) (b)

2 A) Choose from column (B) which suits in column (A):

(A)	(B)
1. Most electric machines produce	a) the partial lunar eclipse occurs.
2. Coal holder is a lever used to	b) heat.
3. Electric lamp is prevented from air to burn its filament by	c) avoid dangers.
4. When a part of the Moon enters the shadow area of the Earth,	d) the glass bulb.

B) Write the scientific term:

1. Materials that allow the flow of electricity through them. (........................)
2. Injuries caused by electricity which are not a direct cause. (........................)
3. ★ Small holes that are widely spread on the lower surface of the leaf. (........................)

3 **A) Give a reason for:**

1. Most electric lamps contain argon gas inside.

....

....

2. Second class levers always conserve the effort.

....

....

B) Correct the underlined words:

1. Connecting the electric lamps in the house must be in series. (..............................)
2. Solar eclipse occurs when the Earth comes between the Moon and the Sun. (..............................)
3. Light becomes bright when we connect more than one bulb in series. (..............................)
4. Fluorescent lamp contains oxygen gas inside. (..............................)
5. ★ Plant absorbs nitrogen gas during the photosynthesis process. (..............................)

4 **A) Put (✓) or (✗):**

1. Lunar eclipse causes harms to the eyes. (   )
2. We must not play with electric connections. (   )
3. Copper and iron are insulators to electricity. (   )
4. Third class levers do not conserve the effort. (   )

B) Complete the following:

1. Lunar eclipse can be seen from any place on the .... and when it starts the color of the Moon tends to be ....
2. ★ The cell membrane of the root hair has .... property which allows some salts to pass through.

Worksheets & Exams

12 Beheira - Science Supervision

1 **A) Complete the following sentences:**

1. The nutcracker is an example of the .... levers.
2. .... is a fixed point that a rigid bar rotates on.
3. In the case of connecting the lamps in .... the lighting of the lamps decreases with their increase in number.
4. .... eclipse is formed when part of the Moon enters umbra of the Earth.

B) Give a reason for:

1. We should not look at the Sun with the naked eye during the solar eclipse.

....

....

2. Some levers are important although they do not conserve effort.

....

....

2 **A) Write the scientific term:**

1. Distance between the fulcrum and the resistance. (....................)
2. Levers sometimes conserve the effort. (....................)
3. One of the dangers of the electricity is that it destroys the tissues of the body. (....................)
4. It occurs when the Moon lies between the Earth and the Sun in one straight line. (....................)

B) What happens when ...?

1. The force equals to the resistance in the first class lever.

....

2. You insert a metallic bar in an electric socket.

....

3 A) Choose the correct answer:

1. The fluorescent lamp contains .... gas. (oxygen – argon – chlorine)
2. The phenomenon of the lunar eclipse occurs in the .... of the lunar month. (first – middle – end)
3. The filament of the light bulb is made of .... (tungsten – copper – iron)
4. Seesaw is from .... class levers. (first – second – third)
5. ★ The plant gets mineral salts through .... (selective permeability – osmosis property – transpiration)

B) What is the importance of ...?

1. A glass bulb in the light bulb.

....

2. Second class lever.

....

4 A) Correct the underlined words:

1. The lunar eclipse occurs two times each month. (....................)
2. The electric lamp changes the electric energy into kinetic energy. (....................)
3. Rubber is from the materials that allow the flow of electricity through it. (....................)
4. Solar eclipse duration does not extend more than two hours and forty seconds. (....................)
5. ★ Plants carry out the photosynthesis process to get rid of excess water. (....................)

B) The length of the force arm is 5 cm and the length of the resistance is 15 cm. If the resistance has a value of 300 Newton, calculate the value of the affecting force.

....

....

13 Beheira - Kafr El-Dawar Educational Zone - El-Safwa Private School

1 **A) Complete the following question:**

1. If the length of effort force arm is longer than the resistance arm, so the effort force is .... than the resistance force.
2. .... occurs as a result of passing electric current through the human body.
3. .... occurs when the whole Moon enters the Earth's umbra.
4. ★ The outer layer of root is called ....

B) Lever has fulcrum between resistance force and effort force if the effort force is 200 Newton and length of force arm is 2 cm.

Calculate the value of resistance force if the length of resistance arm is 4 cm. Does this lever conserve effort or not?

....

....

2 **A) Write the scientific term:**

1. It is an astronomical phenomenon which occurs when the Sun, Earth and Moon are nearly on a straight line with the Moon in the middle. (........................)
2. The distance between fulcrum and resistance. (........................)
3. They are burns that result from electricity and cause the damage of body tissues. (........................)
4. It occurs when part of the Moon enters the Earth's umbra. (........................)
5. ★ The losing of water in the shape of water vapor from the plant leaves. (........................)

B) What happens when ...?

1. You touch a non-insulated wire that has an electric current.

....

2. Effort × its arm does not equal to resistance × its arm.

....

3 A) Choose the correct answer:

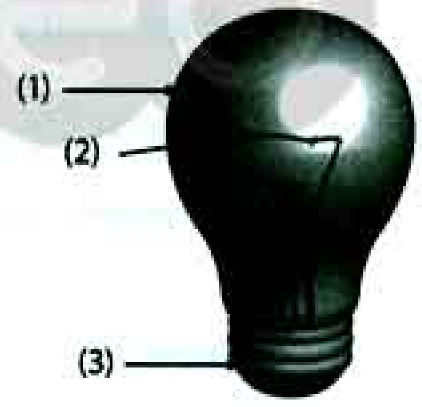
1. We can observe the lunar eclipse when the Moon phase is the ....
   a. crescent b. 1st quadrature
   c. full Moon d. new Moon
2. From levers which conserve effort is ....
   a. manual broom b. tweezers c. wheelbarrow d. coal holder
3. The lunar eclipse occurs ....
   a. twice per year b. once every 21 years
   c. we cannot predict it b. once per month
4. Levers were first described in 260 BC by the Greek scientist ....
   a. Tomes alpha Edison b. Newton
   c. Archimedes d. Bohr

B) Compare between the first class lever and the third class lever:

P.O.C	First class lever	Third class lever
Definition	....	....
Example	....	....

4 A) Look at the figure in front of you, then answer:

- (1) points to ....
  and its function................................
- (2) points to ....
  and its is made of................................
- (3) points to ....
  and its function................................



B) Give a reason for:

1. Some levers are important for man although they do not conserve effort.
   ....
2. Don't place furniture close to electrical machine that generates heat.
   ....
3. We shouldn't look directly at the Sun with the naked eye during the solar eclipse.
   ....

14 Damietta - Directorate of Education - Official Language Schools

1 A) Complete the following sentences:

1. The fluorescent lamp contains .... gas and little of ....
2. When the arm of force equals the arm of resistance, the .... is equal to the ....
3. When a part of the Moon enters the Earth's umbra, ... phenomenon occurs, while .... phenomenon occurs when the cone shadow of the Moon does not reach the Earth's surface.
4. The filament of the bulb is made of .... and that is because it has a high ....

B) What happens when ...?

1. We put out the electric fires by water.

....

2. The light bulbs in the house are connected in series.

....

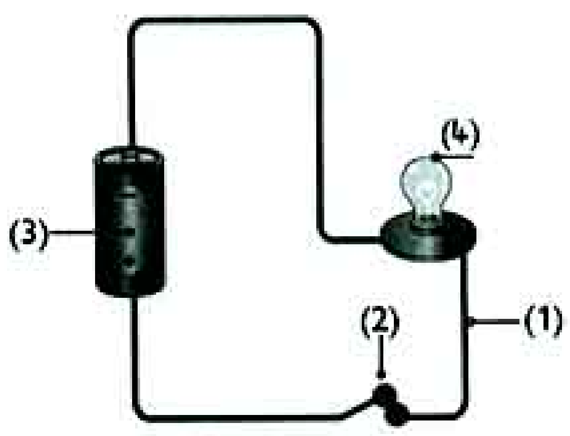
2 A) Write the scientific term:

1. One of the dangers of electricity causing damage to the tissues of the body. (....................)
2. Materials that allow the flow of electric current through them. (....................)
3. The solar eclipse in which the Sun disappears completely. (....................)
4. A method when electric lamps are connected one after another. (....................)

B) Look at the figure, then answer the following:

1. The figure represents ....
2. Write the labels:

   1. .... 2. ....
   3. .... 4. ....



3. The part no. (2) should be .... so that the light bulb glows.

3 A) Choose the correct answer:

1. Which of the following is from the second class levers? - ....
   a. Seesaw. b. Wheelbarrow. c. Sweet holder.
2. The duration of the lunar eclipse is .... that of the solar eclipse.
   a. longer than b. shorter than c. equal to
3. The force arm is sometimes equal to the resistance arm in .... class levers.
   a. first b. second c. third
4. .... solar eclipse is formed when the Moon is located in an orbit higher than the Earth.
   a. Total b. Partial c. Annular

B) Give a reason for:

1. There are two pieces of lead in the light bulb.

....

2. The third class lever does not conserve effort.

....

3. ★ The presence of highly concentrated sap vacuole in root hairs.

....

4 A) Mention the function of levers in:

1. Tweezers: ....
2. Nutcracker: ....
3. Hockey bat: ....
4. Manual broom: ....

B) Correct the underlined words:

1. The lunar eclipse occurs at a rate of two times <u>per month</u>. (................)
2. <u>Annular</u> solar eclipse occurs in the semi-shaded area of the Moon. (................)
3. Fires resulted from electricity are put out by <u>water</u>. (................)
4. The <u>first</u> class lever has the resistance between the force and the fulcrum. (................)
5. ★ The membrane of root hairs is <u>impermeable</u>. (................)

C) The length of the force arm of a crowbar is 100 cm, and the length of the resistance arm is 15 cm, if the value of resistance equals 400 Newton. Calculate the value of effort force and mention the type of the lever.

....

....

15 Sharkia - Sharkia Educational Directorate

1 Write the scientific term:

1. The fixed point of a rigid bar on which the bar rotates. (..............................)
2. Levers that have the force between the resistance and the fixed point. (..............................)
3. The type of levers that always conserve effort. (..............................)
4. Means of converting the electric energy to light energy. (..............................)
5. Materials that allow the electric current to pass through them. (..............................)
6. The phenomenon that occurs when the Earth comes between the Moon and the Sun on one straight line. (..............................)
7. ★ They are tiny holes found on the surface of the leaf. (..............................)

2 A) Choose the correct answer:

1. The force arm is sometimes equal to the resistance arm in the .... class levers.
   (first – second – third)
2. The phenomenon of the lunar eclipse occurs in the .... of the lunar month.
   (end – first – middle)
3. When we increase the number of the electric lamps in the series connection, their light intensity ....
   (increases – decreases – remains the same)

B) Give a reason for:

1. The filament of the light bulb is made of tungsten.
   ....
   ....
2. Water cannot be used to put out the fire resulting from electricity.
   ....
   ....
3. We should not look directly at the Sun with the naked eye during the solar eclipse.
   ....
   ....

3 A) Complete the following:

1. Levers are very important as they increase speed , ... and ....
2. The simple electric circuit consists of .... , ... and electric switch.
3. .... and .... are examples of materials that are electric insulators.
4. Types of the lunar eclipse are .... and ....

B) The force affecting a second class lever equals 200 Newton and the length of its arm is 50 cm and a resistance with a value of 1000 Newton, calculate the value of the arm of the resistance:

1. Law of levers ....
2. Arm of the resistance = ...

4 Correct the underlined words:

1. The crowbar is an example of the <u>third class levers</u>. (............)
2. The manual broom is an example of <u>second class levers</u>. (............)
3. The glass bulb of the electric lamp contains <u>hydrogen gas</u>. (............)
4. The electric lamps are connected in the house in <u>series</u>. (............)
5. <u>The electric fire</u> occurs due to the passage of the electric current through the human body. (............)
6. In the beginning of the total lunar eclipse, the color of the Moon tends to be <u>black</u>. (............)
7. ★ <u>Oxygen</u> gas is produced during the respiration process in the plant. (............)

16 Port Said - Directorate of Education - Inspectorate of Science

1 Complete the following:

1. The nutcracker is an example of the .... class lever.
2. Fluorescent lamp is filled with an inert .... gas.
3. In the solar eclipse, ... is found between the Sun and ....
4. All light bulbs are connected in .... in the house.
5. The manual broom is an example of the .... class levers.
6. ★ .... control the closing and opening of the stomata.

2 A) Choose the correct answer:

1. The filament of the light bulb is made of ....
   a. iron   b. copper   c. tungsten
2. From the first class levers is ....
   a. nutcracker   b. sweet holder   c. scissors
3. From the examples of good electric conductors is ....
   a. wood   b. plastic   c. copper
4. Force arm is sometimes equal to resistance arm in .... class levers.
   a. first   b. second   c. third

B) Match from column (A) with suitable in column (B):

(A)	(B)
1. First class levers	a) Levers that always conserve the effort.
2. Second class levers	b) Levers that do not conserve the effort.
3. Third class levers	c) Levers that sometimes conserve the effort.
4. The fulcrum	d) Fixed point that a rigid bar sits on.

3 A) Write the scientific term:

1. The phenomenon that occurs when a part of the Moon enters the shadow area of the Earth. (....................)
2. Fires occur as a result of the increase in the temperature of the electric machines. (....................)
3. The rigid bar that rotates on a fixed point and is affected by force and resistance. (....................)

B) Correct the underlined words:

1. Looking directly at the lunar eclipse is harmful to the eye. (..............................)
2. While connecting the lamps in parallel, the lamps are connected one after another. (..............................)
3. If the force arm is smaller than the resistance arm, the lever saves effort. (..............................)

4 A) Give a reason for:

1. Water cannot be used to turn off the electric fires.

....

2. ★ Root hairs can absorb water from the soil.

....

B) When would happen in each of the following cases?

When the whole Moon enters the shadow (umbra) area of the Earth.

....

C) The force affecting a second class lever equals 200 Newton and the length of its arm is 50 cm and has a resistance with a value 1000 Newton, calculate the value of the arm of the resistance.

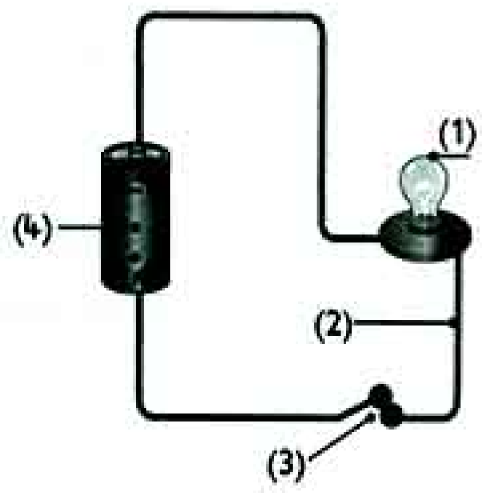
....

....

....

D) Study the following figure, then complete:

1. ....
2. ....
3. ....
4. ....



17 South Sinai - Science Supervision

1 **A) Complete the following sentences:**

1. In the third class levers, the .... lies between .... and fulcrum.
2. From electric insulators .... and ....
3. From the components of the electric circuit are electric wires, switch and ....
4. Solar eclipse occurs when .... lies between the .... and the Sun on the same straight line.
5. The .... from electric dangers that causes the damage of the human body tissues.
6. Sweet holder is an example of .... levers.

B) Give a reason for:

1. We cannot use water in putting out electric fires.
   ....
2. Some levers are important for man although they do not save effort.
   ....
3. ★ The presence of stomata on the lower surface of the plant leaves.
   ....

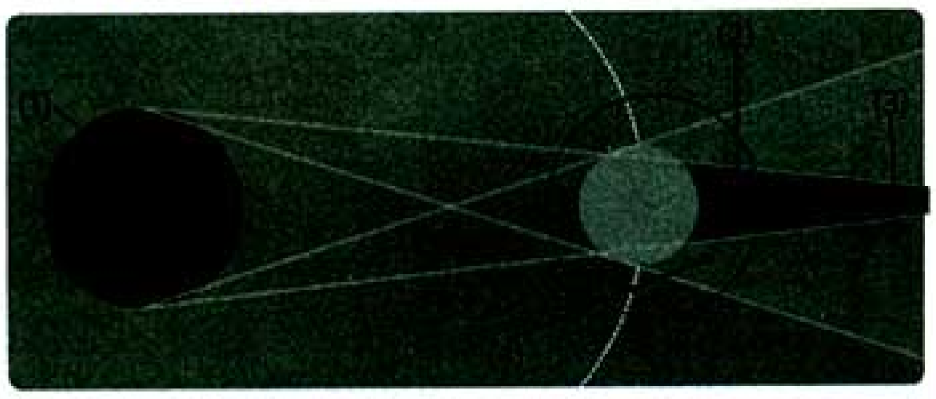
2 **A) Choose the correct answer:**

1. .... is/are from second class levers. (Scissors – Wheelbarrow – Manual broom)
2. When a lamp is connecting in parallel with several other lamps, the light intensity of the lamps .... (decreases – increases – remains as it is)
3. .... is from the electric conductors. (wood – rubber – iron)
4. .... is an example of first class levers. (crowbar – bottle opener – manual broom)
5. In electric lamp, the electric energy changes into .... energy. (kinetic – light – sound)
6. The time taken by the solar eclipse is .... the time taken by the lunar eclipse. (less than – more than – equal)

B) Mention some of the important precautions when dealing with electricity:

1. .... 2. .... 3. ....

C) The opposite figure represents the lunar eclipse phenomenon. Observe it, then label the figure:



1. ....
2. ....
3. ....
4. ....

3 **A) Put (✓) or (✗):**

1. The light bulb contains mercury vapor. ( )
2. Bottle opener is a third class lever. ( )
3. Lunar eclipse does not require precautions or special devices to observe. ( )
4. Scissors are from first class levers. ( )
5. If the force arm is longer than the resistance arm, so the force is more than the resistance and the lever saves effort. ( )
6. In the second class levers the force arm may be equal to the resistance arm. ( )

B) Compare between:

Total lunar eclipse	Partial lunar eclipse

C) Join from column (A) with the suitable in column (B):

A	B
1. Fishing hook	a. connect the lamp to electric circuit.
2. Seesaw	b. source of the electric current.
3. Nutcracker	c. save effort some time.
4. Two pieces of lead in the base of the light bulb	d. always save effort.
	e. always do not save effort.

4 **A) Write the scientific terms:**

1. Levers at which the resistance lies between force and fulcrum. (..................)
2. A coiled thin wire made of tungsten in the light bulb. (..................)
3. A way in which the light bulbs are connected one after another, where the light intensity of the bulbs decreases by increasing their numbers. (..................)
4. The fixed point of a rigid bar on which the bar rotates. (..................)
5. One of the dangers of electricity that occurs as a result of passage of electric current through the human body. (..................)
6. Levers at which the fulcrum lies between the force and the resistance. (..................)

B) In a lever, if the length of the force arm = 4 cm, the length of the resistance force = 6 cm, and the value of the force = 48 N, calculate the value of the resistance.

C) What happens when ...?

1. The electric lamps in decorative lights are connected in series not parallel.
....
2. The whole Moon enters the semi-shaded area of the Earth.
....
3. The electric lamps contain the atmospheric air.
....
4. You place the electric heater too close to furniture and rugs.
....

Worksheets & Exams

18 Fayoum - Science Supervision

1 A) Complete the following:

1. The fulfrum is between effort force and resistance in .... class lever.
   a. first b. second
   c. third d. first and second
2. Fluorescent lamps contains .... gas.
   a. neon b. argon
   c. oxygen d. hydrogen
3. Solar eclipse occurs when the .... between .... and ....
   a. the Sun, the Earth, the Moon b. the Moon, the Earth, the Sun
   c. the Earth, the Sun, the Moon d. the Sun, the Earth, Mars
4. All kinds of .... class levers conserve effort.
   a. first b. second
   c. third d. first and second
5. ★ The membrane of root hairs is ....
   a. impermeable b. permeable
   c. semipermeable d. no correct answers

B) A second class lever, its effort force is 100 Newton, its arm is 200 cm, this lever affects a resistance force that equals 500 Newton. Find the resistance arm:

Effort force × .... = ... × its arm

Resistance arm = ...

2 A) Write the scientific term:

1. A way of connecting bulbs one after another. (..................)
2. Type of lunar eclipse that occurs when the whole Moon enters the shadow area of the Earth (Umbra). (..................)
3. One of the dangers of electricity which causes the damage of body tissues. (..................)
4. A fixed point which a rigid bar rotates around it. (..................)

B) Give a reason for:

1. The bulb filament is made up of tungsten.

....

2. You shouldn't observe the Sun directly.

....

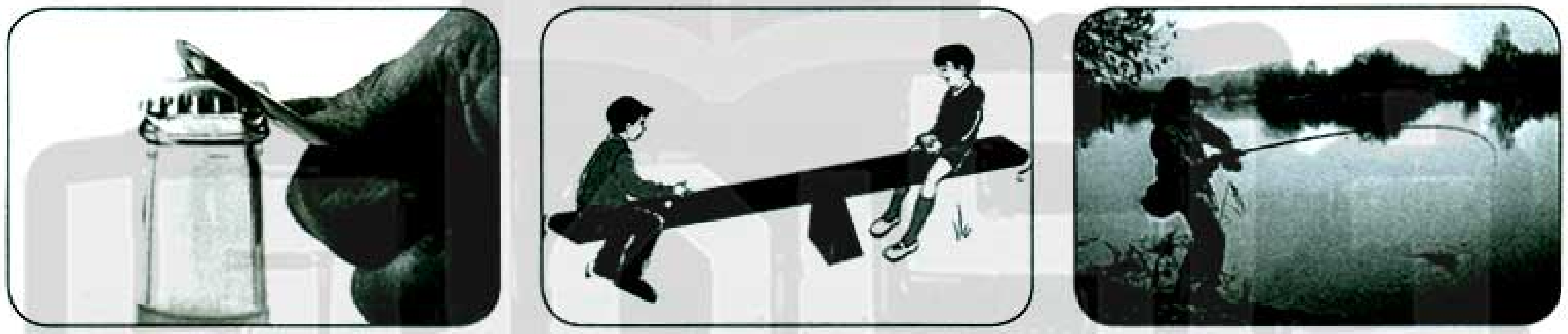
3. ★ Root hairs can absorb water from the soil.

....

3 **A) Put (✓) or (✗):**

1. The crowbar is a first class lever. ( )
2. In the electric bulb, the electric energy changes into kinetic energy. ( )
3. The lunar eclipse does not require precautions. ( )
4. In houses the electric lamps are connected in series. ( )

B) Classify the following tools (levers):



....

4 **A) Complete the following question:**

1. From examples of good conductors of electricity are .... and ....
2. When a part of the Moon enters the shadow of .... a .... lunar eclipse takes place.
3. The inner tube surface of the fluorescent lamp is covered with a .... substance and a little of .... vapor.
4. ★ The outer layer of root is called ....

B) What happens when ...?

1. The effort force is between resistance and fulcrum.

....

2. Placing an electric heater near to furniture.

....

3. Presence of air inside the electric bulb.

....

19 Assuit - Directorate of Education

1 **A) Complete the following:**

1. The type of levers where the arm of the force and the arm of resistance are equal is ....
2. In the solar eclipse, ... is found between the Sun and ....
3. Metallic materials are considered from the electric ...., while glass and rubber are considered from the electric ....
4. The manual broom is a .... class lever.

B) ★ Rearrange the layers of the root from inside to outside:

(Xylem - Pith - Epidermis - Cortex - Endodermis)

2 **A) Put (✓) or (✗):**

1. The fulcrum in scissors lies between force and resistance. ( )
2. The spiral base of the light bulb glows due to passing the electric current through it. ( )
3. If the force arm is smaller than the resistance arm, the lever saves effort. ( )
4. The lunar eclipse occurs in the end of the lunar month. ( )
5. The human body is a good conductor of electricity. ( )

B) What happens when ...?

1. Putting out the electric fires with water.

....

....

2. The light bulbs in the house are connected in series.

....

....

3 **A) Write the scientific term:**

1. A way used to connect electric lamps in branching routes. (..............................)
2. It occurs when part of the Moon enters the shadow area of the Earth. (..............................)
3. One of the dangers of the electricity is that it destroys the tissues of the body. (..............................)
4. Type of levers that does not save effort. (..............................)

B) Give a reason for:

1. We should not look at the Sun with the naked eye.

....

....

2. Sometimes the first class lever saves effort.

....

....

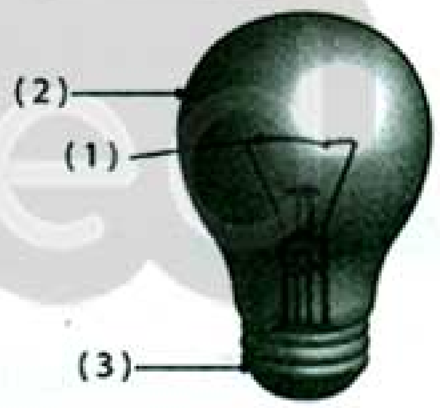
4 **A) Look at the figure, then answer**

1. The device is ....
2. Label the figure:

(1) ....

(2) ....

(3) ....



B) A force of 50 Newton affected a lever of the 2^{nd} class, its force arm is 20 cm. Calculate the resistance given that the arm of the resistance = 5 cm.

....

....

....

....

....

20 Qena - Qena of Educational Administration

1 A) Complete the following question:

1. Materials that allow the .... of electricity through them are electric conductors.
2. Wheelbarrow and soda bottle opener are examples of the .... class lever.
3. When connecting light bulbs in series, the light intensity of the lamps .... by increasing their numbers.
4. Accuracy in performance and avoid dangers are from tasks of the .... class lever.
5. ★The .... is widely spread on the lower surface of the leaves.

B) What is meant by ...?

1. The lever.

....

....

2. ★Solar eclipse.

....

....

2 A) Choose the correct answer:

1. The duration of the lunar eclipse may last for more than ....
   (two hours – two days – two months)
2. The fluorescent lamp contains the inert .... gas. (neon – argon – helium)
3. The types of the lunar eclipse are .... (total – partial – total and partial)
4. The filament of the light bulb is made of .... (copper – tungsten – iron)
5. ★Water is transferred from the plant's stem to the leaves through ....
   (endodermis – xylem vessels – stomata)

B) Give a reason for:

1. The electric heater must not be place close to textiles and carpets.

....

....

2. Sometimes the first class levers do not save effort.

....

....

3 Put (✓) or (✗):

1. Water is used to put out electric fires. ( )
2. Not leaving the wires naked is from the precautions of dealing with electricity. ( )
3. All lamps and machines in the house are connected in parallel. ( )
4. Falling from top of a ladder is considered from direct electric injuries. ( )
5. Plastic, glass, rubber and wood are from the examples of the electric insulators. ( )
6. In the third class levers, the resistance is between the effort force and the fulcrum. ( )
7. ★ The endodermis layer regulates the passing of water to the xylem. ( )

4 A) Write the scientific term:

1. It is one of the dangers of electricity that occurs due to passing the electric current through the human body. (..........................)
2. It is a type of electric lamps that consists of a glass tube and two filaments of tungsten and two points of connection. (..........................)

B) A force of 30 Newton affects a lever and its force arm is 20 cm, the resistance is 20 Newton. Calculate the resistance arm.

....

....

C) ★ Compare between the solar eclipse and the lunar eclipse.

....

....

21 Qena - Qena Directorate of Education

1 A) Write the scientific term:

1. It is the fixed point which the bar rotates around. (..................)
2. It is a way in which the light bulbs are connected one after another in one route. (..................)
3. One of the dangers of electricity that causes the damage of the tissues of the body. (..................)
4. It occurs when the whole Moon enters the shadow area of the Earth. (..................)

B) What happens when ...?

1. Electric fires are put out by water.
....
2. Looking directly at the Sun.
....

2 A) Complete the following:

1. The seesaw is .... class lever, while the wheelbarrow is .... class lever.
2. Electric lamps convert the .... energy into .... energy.
3. ★ The transmission of water from soil to the vacuole of the root hairs occurs by .... feature.

B) Choose the correct answer:

1. .... is considered from electric conductors.
   a. Wood   b. Iron   c. Plastic
2. The filament of the light bulb is made of ....
   a. argon   b. tungsten   c. copper
3. The color of the Moon tends to be .... during the start of the total lunar eclipse.
   a. red   b. green   c. violet
4. Fulcrum is between effort force and resistance in .... class lever.
   a. first   b. second   c. third

3 **A) Put (✓) or (✗):**

1. The crowbar is a third class lever. ( )
2. The effort force is measured by centimeter or meter. ( )
3. The light bulbs are connected in parallel in the house. ( )
4. The electric lamps contain the atmospheric air. ( )
5. The lunar eclipse lasts for four minutes. ( )
6. Solar eclipse occurs when the Moon is between the Sun and the Earth in one straight line. ( )

B) Give a reason for:

1. Second class levers save effort force.
....
2. You shouldn't place a metallic object in the socket.
....
3. ★The cell membrane of root hairs has a selective permeability property.
....

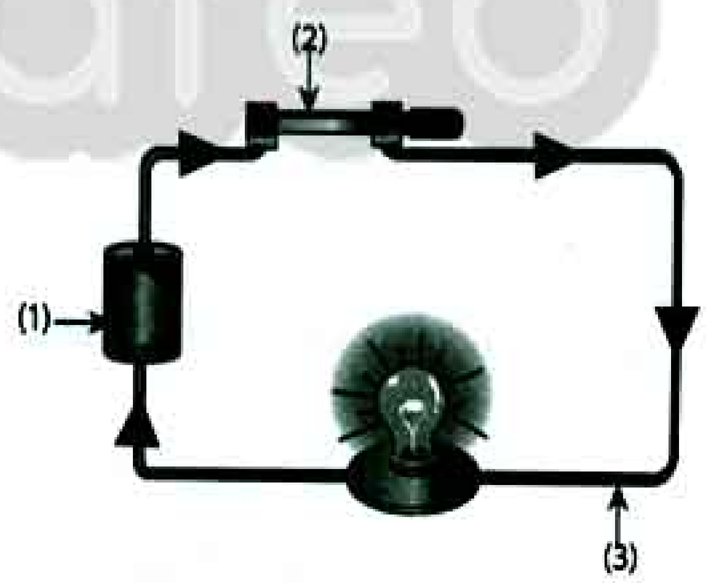
4 **A)** In a lever, the effort force is 100 Newton, the length of the force arm = 25 cm and the resistance = 500 Newton. Calculate the resistance arm.

....
....
....

B) The opposite figure represents ....

Write the labels:

1. ....
2. ....
3. ....



Worksheets & Exams

22 Sohag - Akhmeem Educational Management

1 Complete the following:

1. Levers help us to perform tasks more easily by .... and ....
2. The force and the resistance in levers are equal, if ....
3. The filament of the light bulb is made of .... because it has high ....
4. There are two ways to connect electric lamps: .... and ....
5. The .... eclipse occurs when the .... hides the sunlight from part of the Earth.
6. The lunar eclipse occurs in the .... of the lunar month.

2 Put (✓) or (✗):

1. Wheelbarrow is an example of the first class lever. ( )
2. The lever conserves effort if the effort force arm is shorter than the resistance arm. ( )
3. The fluorescent lamp contains neon gas. ( )
4. In series connection, if one lamp burns the other, lamps keep light. ( )
5. The duration of the solar eclipse may last for more than two hours. ( )
6. We use special glasses during observing the lunar eclipse. ( )

3 A) Write the scientific term:

1. The fixed point of a rigid bar. (....................)
2. The type of levers that always conserve effort. (....................)
3. Tool that converts the electric energy to light energy. (....................)
4. The dangers of electricity that cause damage of the tissues of the body. (....................)
5. ★ The losing of water in the shape of water vapor from the plant leaves. (....................)

B) Compare between:

Comparison	Electric conductors	Electric insulators
Definition	....	....
Examples	....	....

4 **A)** The force affecting a lever equals 200 Newton and the length of its arm is 50 cm and a resistance with a value of 1000 Newton, calculate the value of the arm of resistance. (Mention the law of levers).

....

....

....

....

B) What happens when ...?

1. There is air inside the light bulb.

....

2. The electric fire is put out by water.

....

3. The Earth comes between the Moon and the Sun and they are all on one straight line.

....

4. ★ There is no osmosis feature in the plant.

....

Worksheets & Exams

23 Sohag - Sohag Educational Zone

1 **A) Complete the following:**

1. The distance between the force and fulcrum is known as .... whereas the distance between the fulcrum and the resistance is called ....
2. The harms resulting from an electric shock depend on .... and ....
3. The fluorescent lamp consists of a glass tube that contains a little of .... and inner tube surface is covered with a .... material.
4. ★The .... is widely spread on the lower surface of the leaves.

B) Give a reason for:

1. The wheelbarrow is a lever that always conserves effort.

....

....

2. In houses, electric lamps are connected in parallel.

....

....

2 **A) Write the scientific term:**

1. A rigid bar that rotates around the fulcrum and is affected by the force and the resistance. (........................)
2. Materials that allow the flow of electric current through them. (........................)
3. One of the dangers of electricity causing damage to the tissues of the body. (........................)
4. A tool used to convert the electric energy to light energy. (........................)
5. A type of levers that always does not save effort. (........................)

B) The affecting force on a second class lever equals 200 Newton and the length of its arm is 50 cm. If the value of the resistance is 100 Newton, calculate the value of the arm of resistance.

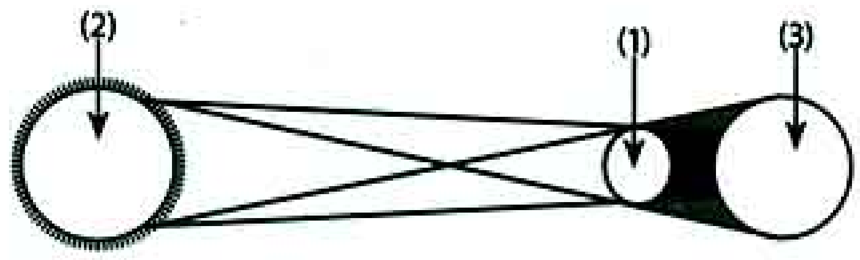
....

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3 **A) The figure shows the solar eclipse:**

Write the labels:

1. ....
2. ....
3. ....



B) Put (✓) or (✗):

1. Rubber is from insulators of electricity. ( )
2. The fluorescent lamp contains one filament of tungsten. ( )
3. If the arm of force is longer than the arm of resistance then the lever conserves the effort. ( )
4. Water is not used to put out electric fires. ( )

4 **A) What happen when ...?**

1. The filament of the light bulb is made of iron.

....

2. ★ There is no osmosis feature in the plant.

....

B) Correct the underlined words:

1. The lunar eclipse extends for more than <u>two days</u>. (....................)
2. Looking at the <u>lunar</u> eclipse causes several harms to eye. (....................)
3. <u>Electric fire</u> occurs as a result of passing an electric current through the human body. (....................)

24 Luxor - Luxor Educational Zone

1 A) Choose the correct answer:

1. The duration of the solar eclipse is ....
   a. two hours b. 7 minutes and 40 seconds c. more that two hours
2. The lunar eclipse occurs in the .... of the lunar month.
   a. beginning b. middle c. end
3. The filament of the light bulb is made of ....
   a. copper b. iron c. tungsten
4. .... is the lever that increases speed.
   a. Hockey bat b. Nutcracker c. Manual broom
5. ★ .... absorb water and mineral salts from the soil.
   a. Leaves b. Root hairs c. Stems

B) What happens when ...?

1. A part of your body touches two wires that have an electric current.
   ....
2. Looking directly at the solar eclipse.
   ....

2 Complete the following:

1. The electric lamp is a device that converts the .... energy into .... energy.
2. .... and .... are ways that connect electricity.
3. The crowbar is considered a .... class lever, but the .... is a third class levers.
4. In the solar eclipse .... is found between the Sun and ....
5. .... and .... are good conductors of electricity.
6. The fluorescent lamps contain .... gas and little amount of ....

3 A) Write the scientific term:

1. The distance between the resistance force and the fulcrum. (......................)
2. A fixed point that a rigid bar rotates on. (......................)

3. They are burns that result from electricity and cause damage of the body tissues. (..........................)

4. A type of eclipse that occurs when the Moon lies in a higher orbit from the Earth. (..........................)

B) Give a reason for:

1. Wheelbarrow always conserves effort.

....

....

2. In total lunar eclipse the Moon tends to be red.

....

....

4 A) Correct the underlined words:

1. In parallel connection of electricity, the light intensity decreases by increasing the number of light bulbs. (..........................)
2. When you place the electric heater close to a curtain, it causes electric shock. (..........................)
3. When a part of the Moon enters the cone shadow partial solar eclipse occurs. (..........................)
4. Base of light bulb glows and emits light when the electric current passes through it. (..........................)
5. ★ Stomata are found in large numbers on the plant's stem. (..........................)

B) In a second class lever, the effort force is 50 N and force arm = 20 cm. If the value of the resistance arm = 5 cm, calculate the value of the resistance.

....

....

....

25 Aswan - Aswan Educational Directorate

1 **A) Complete the following:**

1. The crowbar is considered a .... class lever, but the manual broom is a .... class lever.
2. The fluorescent lamp contains .... gas.
3. You cannot put out the electric fires with water because water is ....
4. There is a conservation of effort for the first class lever if .... is larger than ....
5. ★ The .... in plant is surrounded by two guard cells.

B) Compare between:

1. Electric conductors and electric insulators.

P.O.C	Electric conductors	Electric insulators
Definition	....	....
Examples	....	....

2. Second class lever and third class lever.

P.O.C	Second class lever	Third class lever
Conservation of effort	....	....

2 **A) Correct the underlined words:**

1. The electric lamp converts the electric energy to kinetic energy. (....................)
2. While connecting the lamps in parallel, the lamps are connected one after another. (....................)
3. ★ Transpiration is losing of water in the shape of water droplets. (....................)

B) Give a reason for:

1. We shouldn't look directly at the Sun with the naked eye.

....

2. Not placing metal things inside the socket.

....

C) The force affecting a second class lever equals 200 Newton and the length of its arm is 50 cm and a resistance with a value of 1000 Newton, calculate the value of the arm of resistance.

3 A) Put (✓) or (✗):

1. The two phenomena of solar and lunar eclipses are repeated regularly and can be predicted. ( )
2. There are three connecting points at each of the fluorescent lamp ends. ( )
3. Copper wires connect between the filament and the base of the light bulb. ( )
4. Electric shock occurs due to the passage of the electric current through the human body. ( )

B) What happens when ...?

1. You make the filament of the light bulb from iron.
....
2. The light bulbs in the house are connected in series.
....

4 A) Write the scientific terms:

1. It occurs to the Moon when it completely enters the shadow area of the Earth. (..................)
2. One of the dangers of the electricity is causing the damage of the tissues of the body. (..................)
3. The fixed point of a rigid bar on which the bar rotates. (..................)
4. Fires that occur due to the increase in the temperature of the electric wires. (..................)

B) Match from (A) to (B):

A	B
1. Tweezers	a. lever that increases the speed.
2. Hockey bat	b. lever that avoids danger.
3. Coal holder	c. lever that increases the distance.
4. Manual broom	d. lever that increases the accuracy in performance.

(1) .... (2) .... (3) .... (4) ....

Model Answers

GEM General Tests on Unit 4

P. 55

Test 1

1 A) 1. photosynthesis 2. transpiration
3. pith 4. stomata
B) 1. Because the plant carries out transpiration process.
2. To control opening and closing the stoma.

2 A) 1. oxygen 2. shoot
3. sunlight - CO_2 - water - mineral salts
B) Answer by yourself.

3 A) 1. d 2. c 3. b 4. d
B) Pith ⟶ xylem ⟶ endodermis ⟶ cortex ⟶ epidermis.

4 A) 1. leaf 2. photosynthesis
3. guard 4. transpiration
B) 1. Process by which the plant allows some salts to pass through according to the plant's need.
2. Transmission of water from high concentration of water to low concentration of water through a semi-permeable membrane.

Test 2

1 A) 1. b 2. c 3. a 4. b
B) Answer by yourself.

2 A) 1. guard cell
2. water, water vapor
3. photosynthesis process
4. nitrogen - calcium - magnesium.
B) 1. To make photosynthesis process.
2. To allow the permeability of some salts and not allow the passing of others according to the needs of the plant.

3 A) 1. cortex 2. root hairs
3. two guard cells
B) Fig. (a) open stoma.
Fig. (b) closed stoma.

4 A) 1. (✗) 2. (✓) 3. (✓) 4. (✗)
B) Answer by yourself.

School Exams on the Second Term 2018-2019

P. 60

1 Cairo - Shoubra Educational Directorate

1 A) 1. mercury vapor
2. plastic 3. pliers
4. 7 minutes and few seconds
B) 1. water 2. first
3. annular 4. Archimedes
5. guard

2 A) 1. (✗) 2. (✗) 3. (✓) 4. (✓) 5. (✓)
B)

P.O.C.	Solar eclipse	Lunar eclipse
Reason	Moon comes between the Earth and the Sun on one straight line	Earth comes between the moon and the sun on one straight line
Time of occurrence	at daytime	at night

C) 1. effort force x its arm = resistance x its arm
effort force x 2 = 20 x 6
$\therefore$ effort force = $\frac{20 \times 6}{2}$ = 60 N
2. The lever doesn't conserve effort, because the effort force is larger than the resistance force.

3 A) 1. tungsten - melting point
2. coal holder - ice holder
3. solar - moon
B) 1. pick up very small objects.
2. connect the fluorescent lamp to the electricity.
3. Help the plant to lose most of the excess water that reaches leaves.
C) a. closed b. series connection

4 A) 1. second class lever 2. electric burn
3. effort force 4. total solar eclipse
B) 1. Because, the sun emits harmful rays (UV - IR) that may cause blindness.
2. Because, it causes electric overload that heats up wires leading to electric fires.
3. To allow the water to transmit from the soil (high concentration of water) to root hairs (less concentration of water) by the osmosis feature.
C) 1. This causes electric shock.
2. Annular solar eclipse occurs.

Model Answers

2 Cairo - Educational Zone - Official Language Schools

1 A) 1. third - first
2. third class lever - second class lever
3. tungsten - melting point
4. electricity - human body
5. partial solar eclipse - moon

B) 1. To connect the lamp to the electric circuit.
2. Because, it causes electric overload that heats up wires leading to fires.
3. To get rid of excess water of the plant through transpiration process.

2 A)1. lever 2. first class lever
3. electric burn 4. total lunar eclipse
5. parallel 6. Second class lever

B) effort force × its arm = resistance × its arm
100 × 25 = 500 × its arm

$\therefore$ resistance arm = $\frac{100 \times 25}{500}$ = 5 cm

3 A)1. Fulcrum 2. argon
3. Increasing force
4. Iron 5. guard

B) 1. It protects the filament from burning and increases its lifetime.
2. It prevents air from reaching the filament to protect it from burning.
3. It fixes the plant in the soil.

4 A) 1. (✗) 2. (✗) 3. (✓) 4. (✗)
5. (✓) 6. (✓)

B) 1. The light intensity of the lamps will not be affected by increasing the number of the connected lamps.
2. The filament will burn.
3. The moon light turns to be faint without being eclipsed.

3 Cairo - El Sherouq Zone - Mena Language School

1 A)1. third class lever
2. electric lamp 3. electric burn
4. solar eclipse 5. photosynthesis

B) effort force × its arm = resistance × its arm
200 × 50 = 1000 × its arm

$\therefore$ resistance arm = $\frac{200 \times 50}{1000}$ = 10 cm

2 A)1. Seasaw - pliers
2. effort force × its arm = resistance × its arm
3. argon 4. copper - iron

B) Answer by yourself.

3 A)1. To connect the lamp to the electric circuit.
2. To avoid occurrence of electric fires.

B)1. light 2. two
3. argon 4. parallel
5. root hair

4 A) 1. (✗) 2. (✓) 3. (✓) 4. (✗)

B) 1. The filament will melt at high temperatures.
2. The filament will burn.

4 Giza - Dokki Educational Directorate

1 A)1. Nutcracker 2. plastic
3. middle 4. electric fire

B) a. effort force × its arm = resistance × its arm
10 × 10 = 20 × its arm

$\therefore$ resistance arm = $\frac{10 \times 10}{20}$ = 5 cm

b. The lever saves effort, because the force arm is longer than resistance arm.

C)1. The moon light turns to be faint without being eclipsed.
2. The filament will melt.
3. The root hairs can't control passing of some types of salts according to the plant's need.

2 A)1. first - second 2. parallel
3. electricity 4. moon - earth

B) 1. battery 2. lamp
3. electric wires 4. switch

C) Answer by yourself.

3 A)1. Because, water is a good conductor of electricity.
2. To control opening and closing the electric circuit.
3. Because, the sun emits harmful rays to the eye that may cause blindness.
4. Because, in the first levers only, the effort arm may be equal to resistance arm.

B)1. glass bulb 2. argon gas
3. filament 4. base of light bulb

4 A)1. fulcrum 2. penumbra
3. electric insulators
4. series connection

B) 1. electric fire 2. argon
3. solar 4. copper

C) Answer by yourself.

5 Giza - Giza Educational Administration - Orman Language School

1 A)1. second - first
2. mercury vapor
3. electricity 4. moon
5. stomata

Model Answers

B)1. The effort force is more than the resistance force and this lever doesn't conserve effort.
2. The light intensity of lamps will not be affected.

2 1. mercury vapor 2. sweet holder
3. third 4. tungsten
5. shoot system

3 A)1. electric lamp
2. electric fires 3. total lunar eclipse
4. fulcrum 5. epidermis
B) Answer by yourself.

4 A)1. third 2. total
3. first
B)1. (A) series
(B) parallel
2. Answer by yourself.

6 Giza - Abo El-Nomrous Educational Zone - Ahmos Language School

1 A)1. glass bulb - the base of light bulb
2. don't play with electric connection - don't insert metallic object in socket
3. moon - earth 4. moon
5. photosynthesis
B) 1. 2nd class lever
2. 3rd class lever
3. 2nd class lever
4. 3rd class lever
5. 2nd class lever
6. 2nd class lever

2 A) 1. electric lamp
2. electric fires 3. solar eclipse
B) 1. electric conductor
2. series 3. second
4. dark 5. vapor

3 A) 1. total lunar eclipse
2. a good conductor of electricity
3. mercury vapor
4. penumbra
B)1. Because, the effort arm is always longer than the resistance arm, so the effort force is always smaller than resistance force.
2. Because, the sun emits harmful rays to the eye that may cause blindness.
3. To allow the root hair to control the passing of some types of salts according to the plant's need.

4 A) Answer by yourself.
B) 1. c 2.a 3.b

C)

Osmosis feature	Selective permeability
It is the transmission of water molecules through semi-permeable membrane from an area with high concentration of water to area of low concentration.	It is a process by which the cell membrane of root hair allows some types of salts to pass according to the plant's need.

7 Giza - Boulak El-Dakrour Administration - Dar El-Hanan Language School

1 A)1. tungsten - melting point
2. electric burn 3. partial lunar eclipse
4. epidermis - cytoplasm
B)1. Because, the sun emits harmful rays to the eye that may cause blindness.
2. To protect the filament from burning so the lifetime of the filament increases.

2 A) 1. lever 2. third class lever
3. parallel
4. total solar eclipse
B)1. Some of them conserve effort
2. Allow the plant to get rid of excess water through transpiration process.

3 A) Answer by yourself
B) 1. light 2. copper
3. umbra 4. carbon dioxide

4
A)

P.O.C.	2nd class levers	3rd class levers
Definition	They are levers that have the resistance force between effort force and fulcrum.	They are levers that have the effort force between the resistance force and fulcrum.
Example	Nutcracker	Hockey bat

B) 1. The filament will burn.
2. This causes electric shock.

8 Alexandria - Al-Montazah Directorate - El-Rahman Language School

1 A)1. electric current
2. third class lever 3. penumbra
4. series connection 5. force arm
6. electric circuit
B)1. To prevent turning off all the lamps of the house when one lamp is damaged.
2. Because, the Earth has a great size relative to the moon.
3. Because, it has fulcrum between the effort force and resistance.

Model Answers

2 A)1. The effort force will equal the resistance force and the lever doesn't conserve effort.
2. Partial lunar eclipse occurs.
3. Filament will melt.
B) Answer by yourself.

3 1. argon gas - mercury vapor
2. 7 min and fourty seconds - 2 hours
3. electric shock - electric fires
4. rigid - fulcrum 5. Second - first
6. spiral - two side nails

4 A) 1. water 2. electric fire
3. red 4. Second class
5. Switch 6. transpiration
B) It is astronomical phenomenon which occurs when the Earth, the moon and the sun are nearly on one straight line with moon in the middle.
C) 1. filament 2. glass bulb
3. base 4. piece of lead
5. copper wires 6. argon gas

9 Alexandria - Al-Montazah Directorate

1 A) 1. Third - Second 2. Series - parallel
3. glass bulb - base of light bulb
4. moon - Earth 5. Osmosis feature
B) Answer by yourself.

2 A) 1. increase 2. middle
3. Archimedes 4. fulcrum
B)1. Because, it has high melting point.
2. Because, sometimes in the first class levers, the effort arm is longer than the resistance arm.
3. To control opening and closing the stoma.

3 A) 1. electric lamp 2. manual broom
3. total lunar eclipse
4. electric fire
B)1. Third 2. No
3. Because, the effort arm is always shorter than the resistance arm, so the effort force is always larger than resistance.

4 A) 1. mercury vapor 2. seven minutes
3. second 4. decreases
5. selective permeability
B) Answer by yourself.

10 Dakahlia - Dakahlia Educational Directorate

1 A) 1. electric burn 2. solar eclipse
3. newton 4. good conductors
5. parallel 6. first class lever
7. transpiration
B) Answer by yourself.
C)1. increasing force
2. avoiding dangers

2 A)1. middle 2. argon
3. manual broom
4. shock 5. (a),(b),(c)
6. rubber 7. endodermis
B) Answer by yourself.

3 A)1. Earth - moon - sun
2. tungsten - high melting
3. series 4. umbra
5. good conductor
B)1. The moon tends to be faint without being eclipsed.
2. The other lamps in the circuit will not be affected.
3. Answer by yourself.

4 A) 1. (✗) 2. (✗) 3. (✗) 4. (✓)
5. (✓) 6. (✗)
B)1. base of the bulb
2. copper wires
3. glass bulb 4. argon gas
C)1. battery 2. lamp
3. switch 4. electric wires

11 Kafr El-Sheikh - Directorate of Education

1 A)1. 2 2. tungsten
3. first 4. during day
5. transpiration
B)1. (a) open electric circuit
(B) closed electric circuit
2. The electric current will not flow through wires.

2 A)1. b 2. c
3. d 4. a
B)1. electric conductors
2. indirect injuries
3. stomata

3 A)1. To protect the filament from burning and increases its lifetime.
2. Because, in second class lever the force arm is always longer than the resistance arm so the force is always less than the resistance.
B) 1. parallel 2. lunar
3. becomes faint
4. argon 5. carboon dioxide

4 A) 1. (✗) 2. (✓) 3. (✗) 4. (✓)
B) 1. earth - red
2. selective permeability

Model Answers

12 Beheira - Science Supervision

1 A) 1. second class
2. fulcrum 3. series
4. partial lunar

B) 1. Because the sun emits harmful rays as (UV - IR) that cause blindness.
2. Because they are used in:
- Increasing the speed.
- Increasing the distance.
- Avoiding dangers.
- Preserving accuracy in performance.

2 A) 1. Resistance arm.
2. First class levers.
3. Electric burns.
4. Solar eclipse.

B) 1. The lever does not save effort.
2. Electric shock will occur.

3 A) 1. argon 2. middle
3. tungsten 4. first
5. selective permeability

B) 1. It prevents air from reaching the filament to protect it from burning.
2. It always saves effort.

4 A) 1. year 2. light
3. copper 4. 7 minutes
5. transpiration

B) Answer by yourself.

13 Beheira - Kafr El-Dawar Educational Zone - El-Safwa Private School

1 A) 1. less 2. electric shock
3. total lunar eclipse
4. epidermis layer

B) force x its arm = resistance x its arm
200 x 2 = R x 4

$$R = \frac{200 \times 2}{4} = 100 \text{ N}$$

F > R ∴ It doesn't conserve effort.

2 A) 1. solar eclipse 2. resistance arm
3. electric burns 4. partial lunar eclipse
5. transpiration process

B) 1. You will get an electric shock.
2. The lever becomes unbalanced.

3 A) 1 - c) full moon
2 - c) wheel barrow
3 - a) twice per year
4 - c) Archimedes

B) Answer by yourself.

4 A) 1. Glass bulb.
Function: It prevents air from reaching the filament to protect it from burning.
2. Tungsten filament.
Function: It is heated till it glows and emits light when electric current passes through the filament.
3. The base of lamp.
Function: • It carries the light bulb in an upright position.
• It connects the light bulb to the electric circuit.

B) 1. Answer by yourself.
2. To avoid electric fires.
3. Because the sun emits harmful rays as (UV - IR) that cause blindness.

14 Damietta - Directorate of Education - Official Language Schools

1 A) 1. Argon - mercury vapor.
2. effort force - resistance force.
3. partial lunar eclipse, annular solar eclipse.
4. tungsten, melting point

B) 1. The fire won't be put out and it might increase.
2. Light intensity will decrease by increasing the number of lamps and all the lamps will be turned off if one lamp is burned.

2 A) 1. electric burns
2. electric conductors
3. total solar eclipse
4. series connection

B) 1. simple electric circuit
2. 1. electric wire 2. switch (key
3. battery 4. electric lamp
3. closed.

3 A) 1 - b) the wheel barrow
2 - a) longer than
3 - a) first.
4 - c) annular

B) 1. To connect the lamp with electric circuit.
2. Because the effort force is always greater than resistance force.
3. To allow water to transmit from the soil (high concentration of water) to root hairs (less concentration of water) by the osmosis feature.

4 A) Answer by yourself.

B) 1. per year 2. partial
3. sand 4. second
5. semi permeable

C) Answer by yourself.

Model Answers

15 Sharkia - Sharkia Educational Directorate

1 1. fulcrum 2. third class levers
3. second class levers.
4. electric lamp
5. electric conductors
6. lunar eclipse 7. stomata

2 A) 1. first 2. middle
3. decreases

B) 1. Because it has a high melting point that prevents the filament from melting at high temperature.
2. Because water is a good conductor of electricity, so it will increase the fire.
3. Because the sun emits harmful rays as (UV - IR) that cause blindness.

3 A) 1. force, distance 2. battery, wire
3. wood, plastic
4. total lunar eclipse, partial lunar eclipse

B) 1. Effort force × its arm = the resistance force × its arm
2. 200 × 50 = 1000 × R arm

$R\ arm = \frac{200 \times 50}{1000} = 10\ cm$

4 1. first class levers
2. third class levers
3. argon gas 4. parallel
5. electric shock 6. red
7. carbon dioxide

16 Port Said - Directorate of Education - Inspectorate of Science

1 1. second 2. argon
3. moon, earth 4. parallel
5. third 6. two guard cells

2 A) 1. (c) tungsten 2. (c) scissors
3. (c) copper 4. (a) first
B) 1. c 2. a 3. b 4.d

3 A) 1. partial lunar eclipse
2. electric fires 3. lever
B) 1. solar 2. series
3. longer

4 A) 1. Because water is a good conductor of electricity, so it will increase the fire.
2. Due to the osmosis feature which allows the transmission of water through a semi-permeable membrane from an area of high concentration of water to a lower one.

B) Total lunar eclipse will occur.

C) Effort force × its arm = the resistance force × its arm
200 × 50 = 1000 × R arm

$R\ arm = \frac{200 \times 50}{1000} = 10\ cm$

D) 1. lamp 2. electric wire
3. switch (key) 4. battery

17 South Sinai - Science Supervision

1 A) 1. effort force, resistance force
2. wood, plastic
3. battery
4. moon, earth
5. electric burns
6. third class

B) 1. Because water is a good conductor of electricity, so it will increase the fire.
2. Because they are used in:
- Increasing the speed.
- Increasing the distance.
- Avoiding dangers.
- Preserving accuracy in performance.

3. Because it helps the plant to get rid of excess water by transpiration process

2 A) 1. wheelbarrow.
2. remains as it is
3. iron
4. crow bar
5. light
6. less than

B) 1. Don't use one socket for many devices at the same time.
2. Don't insert metal objects in electric sockets.
3. Don't play with electric connections

C) 1. sun 2. moon
3. umbra (full shadow)
4. penumbra (partial shadow)

3 A) 1. (✗) 2. (✗) 3. (✓)
4. (✓) 5. (✗) 6. (✗)

Model Answers

B)

Total lunar eclipse	Partial lunar eclipse
It is the lunar eclipse which happens when the whole moon falls in the shadow area (umbra) of the earth	It is the lunar eclipse which happens when a part of the moon lies in the shadow (umbra) area of earth and the other part lies in the semi-shadow (penumbra) area of the earth
We can't see the moon completely.	We can't see a part of the moon.

C) 1. e 2. c 3. d 4.a

4 A) 1. second class levers
2. the tungsten filament
3. series connection
4. fulcrum
5. electric shock
6. first class levers

B) F x F arm = R x R arm
48 x 4 = R x 6

$$\text{Resistance} = \frac{48 \times 4}{6} = 32\ \text{N}$$

C) 1. The light intensity will decrease by increasing the number of lamps and if one lamp is burned all the lamps will be turned off
2. The moon will be faint without being eclipsed.
3. This will lead to burning of the filament.
4. This will lead to electric fires.

18 Fayoum - Science Supervision

1 A) 1. (a) first. 2. (b) argon.
3. (b) moon, the earth, the sun.
4. (b) second. 5. (c) semipermeable.

B) Effort force x its arm = Resistance force x its arm

$$\text{Resistance arm} = \frac{100 \times 200}{500} = 40\ \text{cm}$$

2 A) 1. series connection
2. Total lunar eclipse
3. Electric burns 4. Fulcrum

B) 1. Because it has a high melting point that prevents the filament from melting at high temperature.
2. Because the sun emits harmful rays as (UV - IR).
3. Due to the osmosis feature which allows the transmission of water from an area of high concentration of water to an area of low concentration of water.

3 A) 1. (✓) 2. (✗) 3. (✓) 4. (✗)
B) 1. Second class lever
2. First class lever 3. Third class lever

4 A) 1. Iron - copper
2. Earth - partial
3. phosphoric - mercury
4. epidermis

B) 1. This is a third class lever that doesn't save effort.
2. This might lead to electric fires.
3. The tungsten filament will burn.

19 Assuit - Directorate of Education

1 A) 1. First class lever
2. Moon, earth
3. Conductors, insulators
4. Third

B) Pith - Xylem - Endodermis - Cortex - Epidermis

2 A) 1. (✓) 2. (✗) 3. (✗) 4. (✗)
5. (✓)

B) 1. The fire won't be put out and it might increase.
2. Light intensity decreases as the number of lamps increase and all the lamps will turned off if one lamp is burned

3 A)1. parallel connection
2. partial lunar eclipse
3. Electric burns 4. Third class levers

B) 1. Because the sun emits harmful rays as (UV - IR).
2. Because sometimes the arm of force is longer than the arm of the resistance.

4 A) 1. light bulb
2. (1) Tungsten filament
(2) Thin glass bulb
(3) The base of lamp

B) F x F arm = R x R arm
50 x 20 = R x 5

$$\text{Resistance} = \frac{50 \times 20}{5} = 200\ \text{N}$$

Model Answers

20 Qena - Qena Educational Administration

1 A) 1. Flow 2. Second
3. decreases 4. third
5. Stomata

B) 1. It is a rigid bar that rotates around a fixed point called fulcrum and is affected by effort force and resistance force.
2. It is the astronomical phenomenon which occurs when Earth, Moon and Sun are nearly on one straight line with moon in the middle.

2 A) 1. two hours 2. argon
3. total and partial 4. tungsten
5. Xylem vessels

B) 1. To avoid occurrence of electric fires.
2. Because sometimes in the 1st class levers the effort arm is longer than resistance arm.

3 1. (✗) 2. (✓) 3. (✓)
4. (✗) 5. (✓) 6. (✗) 7. (✓)

4 A) 1. electric shock 2. Fluorescent lamp

B) effort force x its arm = resistance x its arm
30 x 20 = 20 x its arm
$\therefore$ Resistance arm = $\frac{30 \times 20}{20}$ = 30 cm

C) Answer by yourself.

21 Qena - Qena Directorate of Education

1 A) 1. fulcrum
2. series connection
3. electric burn 4. total lunar eclipse

B) 1. The fire will increase and could harm the rescuers as water is good conductor of electricity.
2. Answer by yourself.

2 A) 1. first - Second 2. electric - light
3. Osmosis

B) 1. iron 2. tungsten
3. red 4. first

3 A) 1. (✗) 2. (✗) 3. (✓)
4. (✗) 5. (✗) 6. (✓)

B) 1. Because, the effort arm is always longer than the resistance arm.
2. To avoid occurrence of electric shock.
3. Answer by yourself.

4 A) effort force x its arm = resistance x its arm
100 x 25 = 500 x its arm
$\therefore$ Resistance arm = $\frac{100 \times 25}{500}$ = 5 cm

B) 1. battery 2. switch
3. electric wire

22 Sohag - Akhmeem Educational Management

1 1. increasing force - increasing speed
2. force arm = resistance arm
3. tungsten - melting point
4. series - parallel 5. partial solar - moon
6. middle

2 1. (✗) 2. (✗) 3. (✗)
4. (✗) 5. (✗) 6. (✗)

3 A) 1. Fulcrum 2. Second class
3. electric lamp 4. electric burn
5. transpiration

B) Answer by yourself.

4 A) Answer by yourself.

B) 1. The filament will burn.
2. The fire will increase and could harm the rescuers.
3. The lunar eclipse occurs.
4. Water can't be transported from soil to the root hair.

23 Sohag - Sohag Educational Zone

1 A) 1. effort arm - resistance arm
2. strength of electricity - time taken by electricity through human body.
3. mercury vapor - phosphoric
4. stomata

B) 1. Because, the force arm is always longer than the resistance arm.
2. To prevent turning off all the lamps of the house when one lamp is damaged.

2 A) 1. Lever 2. electric conductors
3. electric burn 4. electric lamp
5. 3rd class lever

B) Answer by yourself

3 A) 1. moon 2. Sun 3. Earth

B) 1. (✓) 2. (✗) 3. (✓) 4. (✓)

4 A) Answer by yourself.

B) 1. two hours 2. Solar
3. electric shock

Model Answers

24 Luxor - Luxor Educational Zone

1 A) 1. 7 minutes and 40 seconds
2. middle
3. tungsten
4. hockey bat
5. root hairs

B) 1. This causes electric shock.
2. Harm the retina of the eye that may cause blindness

2 1. electric - light
2. Series - parallel
3. first - hockey bat
4. moon - earth
5. copper - iron
6. argon - mercury vapor

3 A) 1. resistance arm
2. Fulcrum
3. electric burn
4. Annular solar eclipse

B) 1. Because it always has effort arm longer than resistance force.
2. Due to the refraction of some infrared rays that are not absorbed by earth's atmosphere.

4 A) 1. series
2. electric fire
3. lunar
4. filament
5. leave

B) effort force x its arm = resistance x its arm

50 x 20 = resistance x 5

$\therefore$ Resistance force = $\frac{50 \times 20}{5}$ = 200 N

25 Aswan - Aswan Educational Directorate

1 A) 1. first - third
2. argon
3. good conductor of electricity
4. force arm - resistance arm
5. stomata

B) Answer by yourself.

2 A) 1. light
2. series
3. vapor

B) 1. Because the sun emits harmful radiations as (UV - IR) that cause blindness.
2. To avoid electric shock.

C) Answer by yourself.

3 A) 1. (✓) 2. (✗) 3. (✓) 4. (✓)

B) 1. It will melt.
2. The light intensity will decrease by increasing the number of lamps and if one lamp is burned all the lamps will be turned off.

4 A) 1. total lunar ellipse
2. electric burns
3. fulcrum
4. electric fires

B) 1. d
2. a
3. b
4. c

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